



instruction manual revision

general

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to correct your manual.

instruction manual affected:

Service, Owner's, and Operator's manuals for Mobile, Base Station, Marine, and Microwave and Rural Telephone RF Equipment

revision details:

The new OSHA safety information provided below supersedes any similar information already included in the instruction manual. File this manual revision directly under the front cover of the manual.

GENERAL SAFETY INFORMATION

The United States Department of Labor, through the provisions of the Occupational Safety and Health Act of 1970 (OSHA), has established an electromagnetic energy safety standard which applies to the use of this equipment. Proper use of this radio will result in exposure below the OSHA limit. The following precautions are recommended:

DO NOT operate the transmitter of a mobile radio when someone outside the vehicle is within two feet (0.6 meter) of the antenna.

DO NOT operate the transmitter of a fixed radio (base station, microwave, and rural telephone rf equipment) or marine radio when someone is within two feet (0.6 meter) of the antenna.

DO NOT operate the transmitter of any radio unless all RF connectors are secure and any open connectors are properly terminated.

In addition,

DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere.

All equipment must be properly grounded according to Motorola installation instructions for safe operation.

All equipment should be serviced only by a qualified technician.

Refer to the appropriate section of the product service manual for additional pertinent safety information.



MOTOROLA

INSTRUCTION MANUAL REVISION

SMR-3725

GENERAL

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to correct your manual.

INSTRUCTION MANUAL AFFECTED:

68P81015E70-H "MICOR" Two-Way FM Radio (406-420 and 450-512 MHz)

REVISION DETAILS:

Certain notes in the SERVICING INFORMATION section of your manual concerning maintenance procedures for the Antenna Switching Network are no longer applicable. Please make the following corrections to your manual.

-- replaces pages 5-69 through 5-73A with the attached pages.

-- on page 9-11, delete parts list PL-1911-B and refer to Antenna Switch Network parts lists PL-4484-O on page 9-10.

The following table lists some power control board malfunctions and their possible causes:

Power Control Board Troubleshooting Hints

Symptom	Possible Cause - Check the following:
Power Set malfunctioning	a. Power detector diodes CR1001 and/or CR1002
	b. IC601 bias circuitry
	c. POWER SET pot
Drive Limit malfunctioning	a. CR603
	b. Drive Limit pot
"No Power" protect malfunctioning	a. CR604
	b. C611

14. ANTENNA SWITCHING NETWORK

a. Performance Tests

(1) Transmitter Leg Insertion Loss Measurement

The transmitter leg insertion loss should be about 0.8 to 0.9 dB (15-20% power loss). Use the following procedure:

- (a) Connect a thru-line wattmeter, a 50-ohm dummy load, and adapter cables (from PK700A Cable Kit) as shown in Figure 36.

NOTE

For accurate wattmeter readings, make sure low VSWR cable connections are made at all points. This means that all connectors must be properly installed and that a minimum number of adapters are used.

- (b) Key the transmitter and write down the wattmeter reading.

- (c) Exchange the positions of the UHF thru connector and the rf wattmeter, placing the wattmeter at the input to the antenna network.

- (d) Key the transmitter and take a second wattmeter reading.

- (e) If the difference between the two wattmeter readings is greater than 20% of the second wattmeter reading, replace the antenna switching network. Refer to the antenna switching network removal and reinstallation procedure in this manual section.

(2) Receiver Leg Insertion Loss Measurement

The antenna switching network receiver leg insertion loss should be about 1.2 to 1.3 dB (a voltage loss of 10-15%). Use the following procedure to measure the receiver leg insertion loss:

- (a) Connect a rf signal generator to the radio antenna connector through a 6 dB rf pad.

- (b) Make a 20 dB quieting sensitivity measurement. Refer to the receiver rf and i-f troubleshooting chart for the test procedure. Write down the measured 20 dB quieting sensitivity.

- (c) Connect the rf signal generator to the rf input of the receiver rf and i-f board (J104).

- (d) Make a second 20 dB quieting sensitivity check. Write down this second 20 dB quieting sensitivity figure.

- (e) If the difference between the two 20 dB quieting sensitivity figures is greater than 15% of the second 20 dB quieting sensitivity figure, refer to 14d, (1) Tests to Assure Antenna Network is Faulty, 14d (4) Antenna Switch Network Retuning, and check for a defective receiver cable. Replacement of the antenna network is recommended if sensitivity is still poor upon completion of these tests.

(3) Isolation Measurement

The antenna switching network provides approximately 20 dB of isolation between the transmitter rf output connector and the receiver output cable with the transmitter unkeyed and the radio antenna connector terminated in a 50-ohm load. When the transmitter is keyed, switching action in the receiver leg of the network provides 40 to 50 dB of additional isolation. Perform the following procedure to ensure that proper switching action takes place.

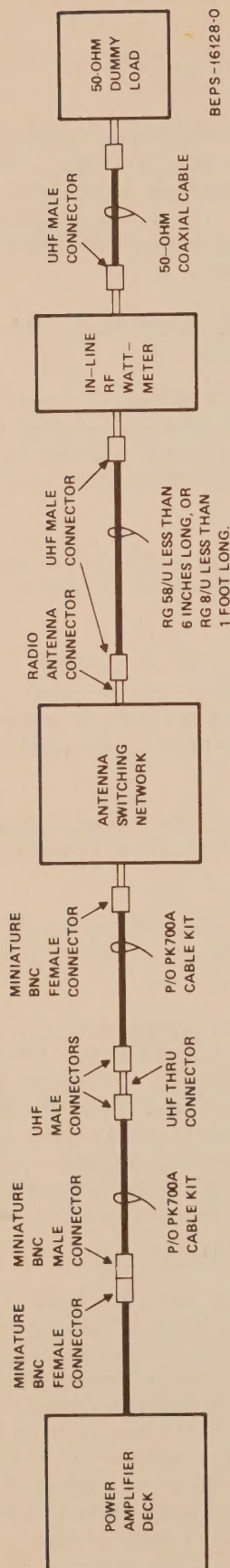


Figure 36.
Transmitter Leg Insertion Loss Test Set-Up

NOTE

Lack of switching action in the receiver leg of the network can allow sufficient transmitter power into the receiver to damage the receiver mixer transistor.

(a) Disconnect the red power lead from the power source or remove the red lead fuse to prevent transmitter PA operation.

(b) Disconnect the transmitter output coaxial cable from the antenna switching network.

(c) Connect an rf signal generator to the antenna connector and an rf voltmeter to the receiver output cable of the network. (If a voltmeter is not available, leave the cable connected to the receiver rf deck and use 20 dB quieting as a measuring reference.)

(d) Set the signal generator to the receiver frequency and at maximum output level. With the transmitter unkeyed, the presence of the injected signal from the signal generator should be noted on the rf voltmeter with only slight attenuation (1.2 to 1.3 dB).

(e) Make sure the transmitter is disconnected from the network. Key the transmitter and check the rf voltmeter reading.

(f) The rf voltmeter reading should drop at least 60 dB (a voltage reduction of 1000 times). If receiver 20 dB quieting is used as a reference, signal generator level should have to be 1000 times greater than normal 20 dB quieting or approximately 500 microvolts.

(g) If the isolation is less than 60 dB, refer to 14d (1) Tests to Assure Antenna Network is Faulty.

(h) Disconnect the test equipment. Reconnect the transmitter output cable to the antenna switching network. Reconnect the red lead to the power source or replace the red lead fuse.

b. Antenna Switching Network Removal and Reinstallation Procedure

- (1) Remove the radio front panel.
- (2) Remove the power control board.
- (3) Remove the five wires from the pushpins on the antenna network board.
- (4) Disconnect the transmitter output coaxial cable from the antenna switching network.

(5) Disconnect the antenna switching network coaxial cable from the rf input jack on the receiver rf and i-f board.

(6) Remove the right-angle bracket that attaches the antenna switching network assembly to the front surface of the radio chassis.

(7) Remove the screw that attaches the antenna switching network assembly to the radio chassis. This screw is located on the "control-board" end of the assembly.

(8) Carefully slide the antenna switching network assembly out of the radio chassis.

(9) To reinstall the antenna switching network assembly, reverse the procedure given in steps (1) through (8).

c. Troubleshooting of Power Sensing Diodes

(1) Check of CR1001 and CR1002

Step 1. Remove the power control board from the radio.

Step 2. With the positive ohmmeter probe at J1001-E and the negative probe at J1001-F, the ohmmeter should read about 250 ohms. When the positions of the probes are reversed, the ohmmeter should read nearly infinity. This checks CR1001.

Step 3. With the positive ohmmeter probe at J1001-D and the negative probe at J1001-E, the ohmmeter should read about 250 ohms. When the positions of the probes are reversed, the ohmmeter should read nearly infinity. This checks CR1002.

(2) Replacement of Diodes

Step 1. Remove the antenna switching network assembly from the radio.

Step 2. Remove the cover from the antenna switching network assembly.

Step 3. Replace the bad diode with Motorola Part Number 48-84616A01.

Step 4. Reassemble the antenna switching network and reinstall it in the radio.

d. Troubleshooting of Reed Switch

A faulty reed switch can cause degradation in receive sensitivity, or a reduction in transmitter-receiver isolation. Perform the antenna switching network performance tests described in paragraph 14d.(1). If the reed switch assembly is suspected, refer to paragraphs 14d.(2) and 14d.(3) for replacement procedures. Retuning of the antenna network is necessary after replacement of the reed switch. The retuning procedure is described in paragraph 14d.(4).

(1) Tests to Assure Antenna Switch Network is Faulty

Step 1. Disable the transmitter by (1) removing the red lead fuse (A+ line), (2) removing the exciter filter input(s) at J301 or J401 or both, or (3) removing the channel element.

Step 2. Measure the dc resistance between the radio antenna connector J1002 and ground. It should be a dc short circuit. If not, remove the antenna switch network and look for an open connection on the output lead (harmonic filter) between the connector and the circulators.

Step 3. Disconnect P104 from the rf deck and check the dc resistance from the center conductor to ground. It should be a dc short and should become an open circuit when the radio is keyed.

Step 4A. If an open is found in both conditions of Step 3, either the connector on the relay is open, the relay lead to the circulator is broken, or the relay is defective. If the relay is defective, replace it and realign the antenna switch network per the test procedure which follows in paragraph 14d.(4).

Step 4B. If a short is found in both conditions of Step 3, either the cable is shorted, the relay is not being switched by current limiter Q1001, or the relay coil (typically 150 ohms) is open. Remove the radio front panel and check the dc voltages on Q1001 and replace if faulty. If the relay is defective, replace it and realign the antenna switch network per the test procedure which follows in paragraph 14d.(4).

Step 5. Remove the antenna switch network following the procedure in paragraph 14b. above and remove the cover by removing the six Phillips head screws.

Step 6. Check the dc resistance across R1005 (see Figure 37); it should be 50-ohms $\pm 10\%$. Energize the relay (white wire to A- yellow wire to A+) the resistance should drop to a short circuit. If it does not, check for a poor connection to the resistor. If the connection is good the relay should be replaced.

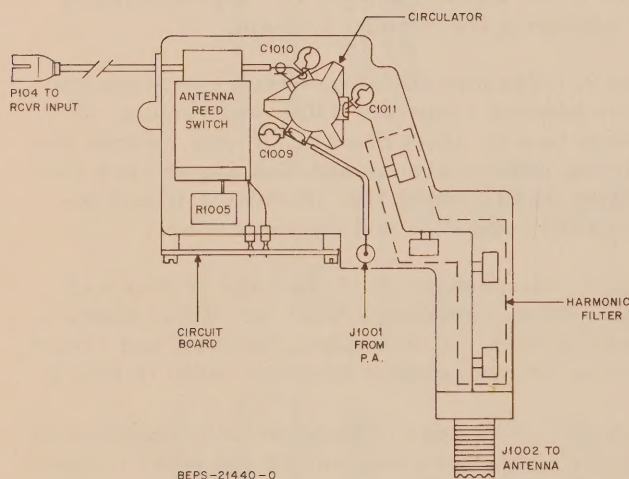


Figure 37.
Antenna Switch Network, Component Location

(2) Removal of Reed Switch

Step 1. Remove antenna switching network as described in paragraph 14b, above.

Step 2. Remove antenna switch network cover by removing six Phillips head screws.

Step 3. Remove the two Phillips head mounting screws on the relay.

Step 4. Unsolder the two wires going to the feed-through capacitors (see Figure 37).

Step 5. Unsolder the lead from the reed assembly to the 50-ohm resistor. It is recommended that a 35 to 50 watt soldering iron with a sharp tip be used. (ST-473) soldering iron with ST-475 or ST-477 tip.)

CAUTION

In order to avoid damage to the resistor, a small screwdriver is recommended to be used as a heat sink while unsoldering the lead from the reed relay. The end of the screwdriver blade should be pushed against the metal strip on the end of the resistor, between the two soldering tabs, as shown in Figure 38. Since the lead from the reed assembly is not wrapped around the resistor lug, a moderate side pressure toward the opposite end of the resistor should be applied to the lead while unsoldering the connection.

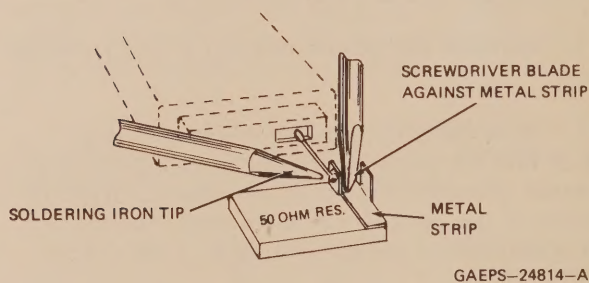


Figure 38. Heat Sinking the 50-Ohm Load Resistor

Step 6. Unsolder the solid coax shield and center conductor going to the circulator. (Remove excess solder from the ground surface.)

Step 7. Clip the phono connector off the white coax cable.

Step 8. Remove reed switch assembly.

(3) Installation of New Reed Switch Assembly 1V80747B76

Step 1. Insert the white coax cable through the antenna switch network housing and set the new reed switch network in place.

Step 2. Insert and tighten the two Phillips head mounting screws. The hold-down clip is used on

the end closest to the 50-ohm resistor.

Step 3. Solder the connecting wires to the feed-through capacitors and the 50-ohm load. Also solder the shielded coax cable to the circulator in place (see Figure 37).

Step 4. Resolder a new 28C84282D01 male phone connector to the white coax cable. The old phono connector may be cleaned for this purpose.

(4) Antenna Switch Network Retuning

Step 1. Connect an rf signal generator to the coax receiver port through a 6 dB pad.

Step 2. Connect a good 50-ohm load to the transmitter port. A miniature BNC female connector is needed. Cable No. 6 in PK700A is suggested.

Step 3. Connect a 50-ohm rf voltmeter to the antenna port. The voltmeter should be capable of reading at least 40 dB below the generator level.

Step 4. Set the rf generator frequency, halfway between the receive and transmit frequencies, if different. Set generator output to maximum.

Step 5. Adjust variable capacitor C1009 (see Figure 37) on the transmitter leg of the circulator for minimum indication on the rf voltmeter.

Step 6. Move signal generator to the transmitter port, the 50-ohm load to the receive port, and rf voltmeter to the receiver port. Adjust variable capacitor C1011 on the antenna leg of the circulator for minimum indication on the rf voltmeter.

Step 7. Move the signal generator to the antenna port, the 50-ohm load to the receiver port and the rf voltmeter to the transmitter port. Adjust variable capacitor C1010A on the receiver leg of the circulator for minimum indication on the rf voltmeter.

Step 8. Repeat Steps 1 through 7 until no further improvement is obtained.

Step 9. Check the antenna switching network for satisfactory operation as outlined in paragraph 14a. If the antenna switching network is still unsatisfactory, the entire ASN must be replaced. Failure of the 50-ohm resistor or magnetic circulator are not field repairable, and would require replacing the entire antenna switching network.

Step 10. Reinstall antenna switching network in radio and check receiver sensitivity and transmitter power.

15. "PRIVATE-LINE" ENCODER

a. Recommended Test Equipment

(1) Motorola SLN622 1A "Private-Line" Tone Generator -- used for testing "Vibrasender" resonant reeds.

(2) Motorola Solid-State AC Voltmeter -- used for tone level measurement.

(3) General purpose oscilloscope -- variable for signal tracing and locating sources of distortion.

(4) Motorola Solid-State DC Multimeter -- used for dc voltage measurements.

(5) Motorola S1343 Series Digital Frequency Meter or S1344 Series Digital Frequency and Deviation Meter -- used for measuring PL tone frequency.

b. Performance Test

Measure frequency deviation of the transmitter in which the PL encoder is installed. With the transmitter keyed and PL-tone modulation (only), deviation should read ± 0.5 to ± 1.0 kHz.

c. Troubleshooting

(1) If no deviation is measured, the trouble may lie in the tone oscillator or tone output circuit. The trouble may be isolated by the following steps.

(a) Check 9.6 volt input to encoder.

(b) Check ac signal voltage at collector of Q701.

(c) If signal is present, check Q704.

(d) If no signal is present by component in the oscillator loop could cause the trouble. Check the "Vibrasender" resonant reed in the SLN622 1A "Private-Line" Tone Generator.

(e) If the tone generator does not produce an output signal, the reed may be defective. Check it by substituting another "Vibrasender" reed in

this place, or by using it in another encoder circuit.

(f) If the reed is good, replace it in the encoder and make dc voltage measurements in the tone oscillator circuit to locate the defective component.

(2) If low deviation is measured, check ac signal voltages and compare them with those given on the schematic diagram in the diagram section of the manual to find the source of trouble.

(3) If deviation is normal, but your calls are not being received, check the frequency of the PL encoder tone. If the tone is off-frequency, replace the "Vibrasender" resonant reed.

(4) If squelch-tail noise bursts are heard by all listening receivers, check dc voltages of Q703 and Q706 in keyed and unkeyed conditions.

(5) If the transmitter cannot be keyed, and the trouble has been isolated to the PL encoder board, measure dc voltages in Q705 and Q707 stages.

(6) If too much tone deviation is measured, check feedback amplifier Q708.

16. "DIGITAL PRIVATE-LINE" ENCODER

a. Recommended Test Equipment

(1) Motorola Model QLN6413A "Digital "Private-Line" Test Set -- used to encode and decode

a "Digital Private-Line" code for test purposes.

(2) Motorola Solid-State AC Voltmeter -- used for tone level measurement.

(3) General purpose oscilloscope -- used to observe waveforms.

(4) Motorola Solid-State DC Multimeter or Digital Voltmeter -- used for dc voltage measurements.

b. Performance Tests

A properly functioning encoder should be able to modulate the transmitter rf carrier at least ± 0.5 kHz with no other modulating signal applied to the transmitter. A Digital PL code should be transmitted during the time the PTT switch is closed. Immediately after the PTT switch is opened, the encoder should keep the transmitter keyed for about 180 milliseconds more and modulate the transmitter with a turn-off code. A Motorola Model SLN6413A "Digital Private-Line" Test Set can be used to determine if the encoder is producing the proper Digital PL code.

c. Troubleshooting

Before you begin troubleshooting, inspect the encoder board and transmitter exciter board for visible defects. If any defects are found, correct them and check the encoder performance again. If the encoder performance is still unsatisfactory, use the following troubleshooting chart to help you isolate the defective circuit and component.

general

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to correct your manual.

instruction manual affected:

68P81034E50-A Digital Voice Protection Micor Mobile Radio

68P81015E70-H Micor® FM Two-Way Mobile Radio

revision details:**Transmit Circuitry Section**

1. The low level amplifier models TLE8065A and TLE8075A parts list is replaced with the following revised parts list PL-1912-D; note IV is added to the same parts list.
2. Schematic diagram, EEPS-8997-H, Low Level Amplifiers and PA Metering Board located on page PEPS-23565-A (page 5 of 8 in 68P81034E50-A Instruction Manual) and on page PEPS-16264-C (68P81015E70-H Instruction Manual). Transistor Q504 (4th low level amplifier) will be type M9737 on ranges L, M, and H; on range HH Q504 will be type M1155. See parts list PL-1912-D shown on page 2.

68P81013E85-A MICOR Mobile FM Two-Way Radio w/Wide-Spaced Receiver
68P81017E85-C MICOR VHF Trunked Radio
68P81030E85-O MODAT Mobile Data Terminal
68P81022E90-E MICOR Upright Base & Repeater (RT) Stations
68P81038E90-O MICOR Trunked FM Mobile Radio
68P81102E23-H Channel Scan Monitor
68P81106E44-A Systems•90 Touch Code Encoder

revision details:

New part numbers for existing integrated circuits used in a variety of applications have been assigned. Refer to the following list:

Present Motorola Part No.	New Motorola Part No.
51-84267A02	5182848M71
51-84267A07	51-84561L69
51-84267A08	51-82848M70
51-84267A09	51-84561L79
51-84267A46	51-82848M69
51-84267A38	51-84561L68

IMPORTANT

While either part number will operate properly, the new Motorola part no. should be used when replacing integrated circuits.

The following list of kits are affected by the integrated circuit(s) part number changes:

Kits affected:

DLN6286A	TLD5131A	TLD8514B	TLN5165B
DLN6337A	TLD5132A	TLD8643B	TLN5761A
TLB6831A	TLD5273B	TLD8644B	TLN5809A
TLB6832A	TLD5274B	TLE8031B	TLN5810A
TLB6833A	TLD5371A	TLE8032B	TLN5837A
TLB6834A	TLD5372A	TLE8033B	TLN5981A
TLB6851B	TLD5382A	TLE8921A	TLN5983A
TLB6852B	TLD5781A	TLE8922A	TRF6011A
TLB6853B	TLD5781AV	TLE8923A	TRF6011B
TLB6854B	TLD5782A	TLN4310B	TRF6013A
TLB6861B	TLD5782AV	TLN4519A	TRN4014A
TLB6862B	TLD5783A	TLN4520A	TRN6003B
TLB6863B	TLD5783AV	TLN4622B	TRN6006A
TLB6864B	TLD5784A	TLN4725A	TRN6007A
TLB6913B	TLD5784AV	TLN4754A	TRN6540A
TLB6914B	TLD8261B	TLN4891B	TRN6664A
TLB6923B	TLD8262B	TLN4891C	TRN6752A
TLB6924B	TLD8271B	TLN4962A	TRN6791A
TLB8161A	TLD8272B	TLN5013B	TRN8095A
TLB8162A	TLD8273B	TLN5014A	TRN8406A
TLB8163A	TLD8274B	TLN5015A	TRN8639A
TLB8164A	TLD8451B	TLN5016A	TRN8676A
TLB8354A	TLD8452B	TLN5019A	TRN8826A
TLB8494A	TLD8453B	TLN5022A	TRN8835A
TLD4071B	TLD8454B	TLN5025A	TTN6004A
TLD4072B	TLD8503B		
TLD4073B	TLD8504B		
TLD4074B	TLD8513B		

Change the appropriate kit(s) parts list in your instruction manual to reflect the new integrated circuit part numbers.



INSTRUCTION MANUAL REVISION

SMR-3899-1

GENERAL

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to correct your manual. This revision supercedes SMR-3899.

INSTRUCTION MANUALS AFFECTED:

68P81008E40-P	"Micor"® FM Two-Way Radio (132-174 MHz)
68P81012E10-G	"Micor" Railroad FM Radios (150.8-174 MHz, 45 W)
68P81012E65-D	"Micor" Mobile Radio with Wide-Spaced Transmitter
68P81013E65-K	"Micor" "Compa-Station" Base Radio Remote Control
68P81014E05-O	"Micor" FM Two-Way Radio Repeater Models
68P81014E10-O	"Micor" FM Two-Way Radio Duplex Models
68P81014E15-E	"Micor" Two-Way FM Radio, Wide-Spaced Applications
68P81015E70-H	"Micor" FM Two-Way Radio (406-420 MHz & 450-512 MHz)
68P81015E75-B	"Micor" FM Two-Way Duplex Radio (470-494 MHz)
68P81017E85-C	"Micor" VHF "Compa-Station" Base Radio
68P81020E40-E	"Micor" Base Station, 4-Frequency Tone Remote Control
68P81021E55-B	"Micor" FM Two-Way Duplex Mobile Radio (450-470 MHz)
68P81023E10-A	"Micor" "Systems 90" Channel Scan Monitor
68P81023E15-A	"Micor" Mobile Repeater Radio (150.8-162 MHz)
68P81023E20-A	"Micor" "Systems 90" Electronic Siren
68P81023E40-O	"Micor" FM Two-Way Duplex Mobile Radio (470-494 MHz)
68P81025E50-G	"Micor" Base and Repeater Stations
68P81025E60-D	"Micor" Base & Repeater Stations
68P81028E05-A	"Micor" IMTS Base Station, Model Q1404AD
68P81029E45-C	"Micor" EMS Duplex/Repeater UHF Mobile Radio
68P81034E25-A	DVP System "Micor" Base & Repeater Stations
68P81034E45-A	"Micor" Dual Receiver Mobile Radio (42-50 MHz)
68P81034E50-A	DVP "Micor" Mobile Radio (406-420 MHz & 450-512 MHz)
68P81102E23-H	"Micor" "Systems 90" Channel Scan Monitor
68P81102E31-F	"Mitretek"/"Micor Systems 90" Single Tone Encoder
68P81106E46-B	"Mitretek"/"Micor Systems 90" "Touch-Code" Mobile Selective Signaling Decoder

REVISION DETAILS:

1. New part numbers for existing integrated circuits used in a variety of applications have been assigned. Refer to the following list:

SMR-3899-1
5/16/80

Present Motorola Part No.	New Motorola Part No.
51-84320A02	51-83629M12
51-84320A13	51-84371K60
51-84320A27	51-83629M13
51-84320A47	51-84561L76
51-84320A50	51-84561L83
51-84084D01	51-84371K01
51-84084D15	51-84371K26
51-84084D20	51-84371K09
51-84084D21	51-83627M06
51-84084D29	51-84371K06
51-84084D34	51-84371K15
51-84792E01	51-83627M07
51-84792E03	51-82848M30
51-84792E04	51-82848M31
51-84792E05	51-82848M32
51-84792E11	51-83627M08

IMPORTANT

While either part number will operate properly, the new Motorola part number should be used when replacing integrated circuits.

- The following list of kits are affected by the integrated circuit(s) part number changes:

Kits affected:

TLD8620A Kit, Power Control
 TLN4519A Channel Scan Board Kit
 TLN4520A Channel Scan Board Kit
 TLN4525A Encoder Board Kit
 TLN4526A Encoder Board Kit
 TLN4926A Kit, Power Control
 TLN5761A Channel Scan Board Kit
 TLN5984A Alternate Control Mode Circuit Board
 TLN5987A Encoder Board Kit
 TRN6015A Decoder ID Board Kit
 TRN6043A Group Call Decoder Circuit Board
 TRN6184A Individual Call Decoder Circuit Board, Pos. Gnd
 TRN6185A Group/All Call Decoder Circuit Board, Pos. Gnd

- Change the appropriate kit(s) parts list in your instruction manual(s) to reflect the new integrated circuit(s) part numbers.

general

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instruction manual affected:

68P81015E70-G, H

406-512 MHz "MICOR" FM Two-Way Mobile Radio

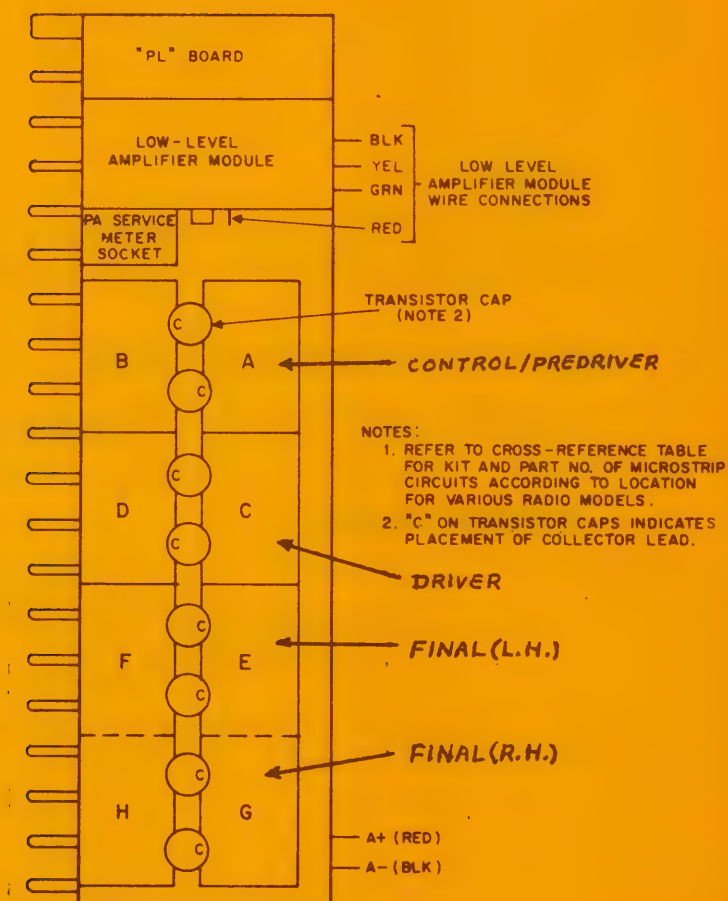
revision details:

IMPORTANT

New power amplifiers for the 25 W, 45 W, 75 W and 100 W power levels are now available and are identified by the suffix letter "B" (Example: TLE1470A, TLE1470B).

1. In the Servicing Information section, immediately following page 5-60, add the following details A and B.

Power Amplifier Microstrip Modules



A power amplifier module consists of:

1. Two microstrips.
2. One or two required transistors.
3. All required chip capacitors.

Detail A.

Power Amplifier Microstrip Cross-Reference Table
(“B” Suffix Models)

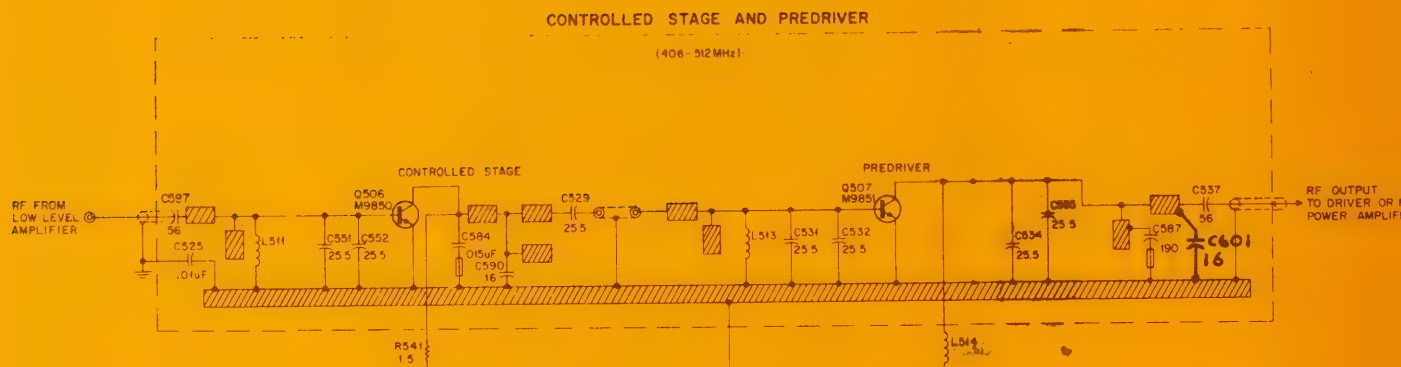
Location	Radio Model Series	Freq. Range (MHz)	Microstrip Part No.	Kit Number				
				Predriver	Driver	Final (L.H.)	Final (R.H.)	Hardware Kit
A	T34	450-512	1-80769B98	TTN6041A	TRN8732A			TLE8082A
	T44	406-420	1-80712D36	TRN8737A	TRN8738A			TLE8091A
		450-512	1-80769B98	TTN6041A	TRN8734A			TLE8092A
	T54	450-470	1-80769B98	TTN6042A	TRN8731A	TLE5182A	TLE5172A	TLE8102A
		470-512	1-80769B98	TTN6042A	TRN8733A	TLE5183A	TLE5173A	TRN8692A
	T74	406-420	1-80712D36	TRN8737A	TRN8739A	TRN8740A	TRN8687A	TLE8111A
		450-470	1-80769B98	TTN6042A	TRN8735A	TRN8736A	TRN8688A	TLE8112A
		470-494	1-80769B98	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TLE8113A
		494-512	1-80769B98	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TRN8691A
B	T34	450-512	1-80769B99	TTN6041A	TRN8732A			TLE8082A
	T44	406-420	1-80712D37	TRN8737A	TRN8738A			TLE8091A
		450-512	1-80769B99	TTN6041A	TRN8734A			TLE8092A
	T54	450-470	1-80769B99	TTN6042A	TRN8731A	TLE5182A	TLE5172A	TLE8102A
		470-512	1-80769B99	TTN6042A	TRN8733A	TLE5183A	TLE5173A	TRN8692A
	T74	406-420	1-80712D37	TRN8737A	TRN8739A	TRN8740A	TRN8687A	TLE8111A
		450-470	1-80769B99	TTN6042A	TRN8735A	TRN8736A	TRN8688A	TLE8112A
		470-494	1-80769B99	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TLE8113A
		494-512	1-80769B99	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TRN8691A
C	T34	450-512	1-80739B15	TTN6041A	TRN8732A			TLE8082A
	T44	406-420	1-80754B03	TRN8737A	TRN8738A			TLE8091A
		450-512	1-80739B11	TTN6041A	TRN8734A			TLE8092A
	T54	450-470	1-80739B15	TTN6042A	TRN8731A	TLE5182A	TLE5172A	TLE8102A
		470-512	1-80739B15	TTN6042A	TRN8733A	TLE5183A	TLE5173A	TRN8692A
	T74	406-420	1-80754B03	TRN8737A	TRN8739A	TRN8740A	TRN8687A	TLE8111A
		450-470	1-80739B11	TTN6042A	TRN8735A	TRN8736A	TRN8688A	TLE8112A
		470-494	1-80739B11	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TLE8113A
		494-512	1-80739B11	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TRN8691A
D	T34	450-512	1-80739B35	TTN6041A	TRN8732A			TLE8082A
	T44	406-420	1-80754B04	TRN8737A	TRN8738A			TLE8091A
		450-512	1-80739B12	TTN6041A	TRN8734A			TLE8092A
	T54	450-470	1-80705D73	TTN6042A	TRN8731A	TLE5182A	TLE5172A	TLE8102A
		470-512	1-80739B16	TTN6042A	TRN8733A	TLE5183A	TLE5173A	TRN8692A
	T74	406-420	1-80754B04	TRN8737A	TRN8739A	TRN8740A	TRN8687A	TLE8111A
		450-470	1-80739B13	TTN6042A	TRN8735A	TRN8736A	TRN8688A	TLE8112A
		470-494	1-80739B13	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TLE8113A
		494-512	1-80739B13	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TRN8691A
E	T54	450-470	1-80705D71	TTN6042A	TRN8731A	TLE5182A	TLE5172A	TLE8102A
		470-512	1-80793B46	TTN6042A	TRN8733A	TLE5183A	TLE5173A	TRN8692A
	T74	406-420	1-80754B06	TRN8737A	TRN8739A	TRN8740A	TRN8687A	TLE8111A
		450-470	1-80705D71	TTN6042A	TRN8735A	TRN8736A	TRN8688A	TLE8112A
		470-494	1-80793B46	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TLE8113A
		494-512	1-80793B46	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TRN8691A
F	T54	450-470	1-80739B28	TTN6042A	TRN8731A	TLE5182A	TLE5172A	TLE8102A
		470-512	1-80739B28	TTN6042A	TRN8733A	TLE5183A	TLE5173A	TRN8692A
	T74	406-420	1-80754B05	TRN8737A	TRN8739A	TRN8740A	TRN8687A	TLE8111A
		450-470	1-80739B28	TTN6042A	TRN8735A	TRN8736A	TRN8688A	TLE8112A
		470-494	1-80739B28	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TLE8113A
		494-512	1-80739B28	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TRN8691A
G	T54	450-470	1-80705D72	TTN6042A	TRN8731A	TLE5182A	TLE5172A	TLE8102A
		470-512	1-80793B45	TTN6042A	TRN8733A	TLE5183A	TLE5173A	TRN8692A
	T74	406-420	1-80754B08	TRN8737A	TRN8739A	TRN8740A	TRN8687A	TLE8111A
		450-470	1-80705D72	TTN6042A	TRN8735A	TRN8736A	TRN8688A	TLE8112A
		470-494	1-80793B45	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TLE8113A
		494-512	1-80793B45	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TRN8691A
H	T54	450-470	1-80739B27	TTN6042A	TRN8731A	TLE5182A	TLE5172A	TLE8102A
		470-512	1-80739B27	TTN6042A	TRN8733A	TLE5183A	TLE5173A	TRN8692A
	T74	406-420	1-80754B07	TRN8737A	TRN8739A	TRN8740A	TRN8687A	TLE8111A
		450-470	1-80739B27	TTN6042A	TRN8735A	TRN8736A	TRN8688A	TLE8112A
		470-494	1-80739B27	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TLE8113A
		494-512	1-80739B27	TTN6042A	TRN8735A	TRN8689A	TRN8690A	TRN8691A

EPS-27084-O

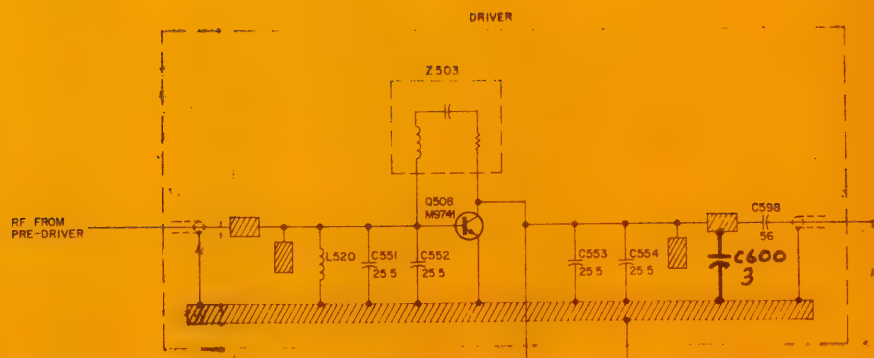
Detail B.

2. In the Transmit Circuitry section, pages 9-6 through 9-10, the following changes are made:

- a. Capacitor C600 (3 pF, ± 0.25 pF, 250 V; Motorola Part No. 21-82133G45) is added in the 450-470 MHz, 75-watt models only. See detail D.
- b. Capacitor C601 (16 pF ± 0.5 pF, 50 V; Motorola Part No. 21-84736E08) is added in the 450-470 MHz, 75-watt and 100-watt models only. See detail C.
- c. Resistors R540 and R542 (1.0 $\pm 10\%$, 1/2 W; Motorola Part No. 6-125D70 for 450-470 MHz and 4.7 $\pm 5\%$, 1/2 W Motorola Part No. 6-125B71 for 470-512 MHz) are added in the 100-watt models only. See detail E.

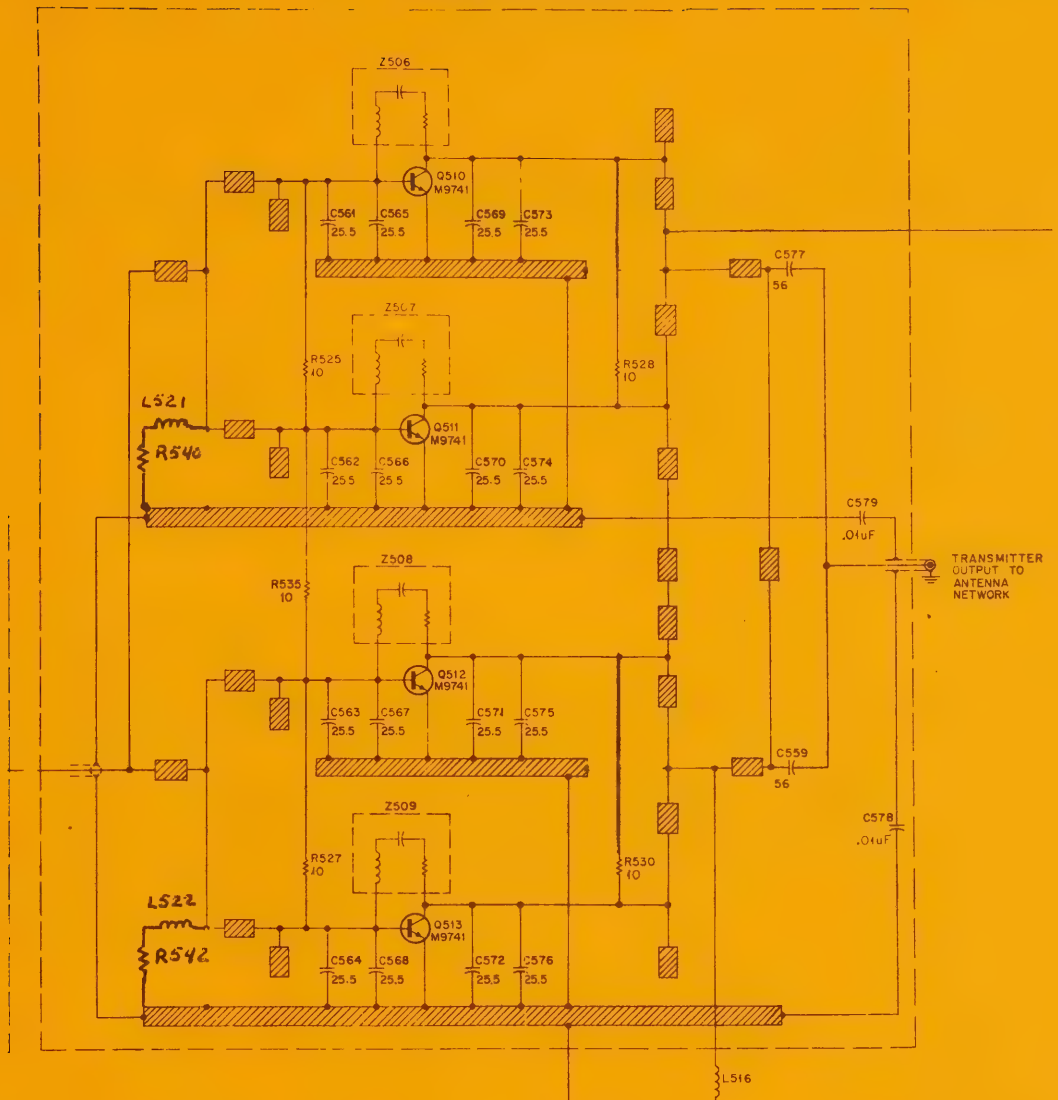


Detail C.



Detail D

400 WATT
RF POWER AMPLIFIER (450-512 MHz)



Detail E



MOTOROLA

INSTRUCTION MANUAL REVISION

SMR-3828

GENERAL

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to correct your manual.

INSTRUCTION MANUALS AFFECTED:

68P81015E70-H	406-420 MHz and 450-512 MHz "MICOR" Mobile Two-Way FM Radio
68P81029E05-E	806-821 MHz TX, 851-866 MHz RX "MICOR" Mobile Two-Way FM Radio

REVISION DETAILS:

ACCESSORIES and HARDWARE KIT tab

In section 68P81035E22-A and 68P81030E77-B "MICOR" Model Hardware Kits, make the following changes to the Mechanical Parts.

1. Item 17. Delete 3-138295 SCREW, tapping: 8-32 x 3/8"; 2 used
2. Item 22. Change to 64-82475M01 PIVOT PLATE, handle; 2 used
3. Item 23. Delete 43-84273B01 INSERT, handle
4. Item 24. Change to 75-82479M01 CUSHION, hand grip
5. Item 25. Change to 55-82386M01 HANDLE



INSTRUCTION MANUAL REVISION

SMR-3948

GENERAL

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to correct your manual.

INSTRUCTION MANUAL AFFECTED:

68P81015E70-H "MICOR" FM Two-Way Mobile Radio
406-420 MHz and 450-512 MHz

REVISION DETAILS:

TRANSMITTER Tab

1. On schematic diagram PEPS-16264-C, make the following changes to Controlled Stage and Predriver schematic (LATER MODEL):
 - a. Add diode CR503 from the emitter of Q505 to ground (anode side to ground).
 - b. Disconnect resistor R534 (1k) from the "A+" line and connect to the "A-" line.
2. On diagram PEPS-21306-B, add the following to parts list PL-1907-G:

CR503

48-82466H13

silicon



MOTOROLA INC.

instruction manual revision

general

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to correct your manual.

instruction manual affected:

68P81012E10-G	150.8-174 MHz MICOR Railroad FM Radio
68P81008E40-N	132-174 MHz MICOR FM Two-Way Radio
68P81015E70-H	406-512 MHz MICOR FM Two-Way Radio
68P81029E05-D,E	806-866 MHz MICOR FM Mobile Radio
68P81034E50-O,A	406-512 MHz Digital Voice Protection MICOR Mobile Radio
68P81037E10-O	132-174 MHz Digital Voice Protection MICOR Mobile Radio
68P81032E25-A,B	806-866 MHz MICOR Super Console Control Stations

revision details:

In The ACCESSORIES section, Model TLN1361A Time-Out Timer 68P81030E67, the following changes are made:

Resistor R12 is changed to 15k $\pm$ 10%, 1/8 W
(Motorola Part No. 6-185B93).

Transistor Q5 is changed to type M9590
(Motorola Part No. 48-869590).

general

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to correct your manual.

instruction manual affected:

68P81034E50-A Digital Voice Protection Micor Mobile Radio 406-420 MHz and 450-512 MHz

68P81015E70-H Micor FM Two-Way Mobile Radio 406-420 MHz and 450-512 MHz

revision details:**Important**

1. Alternate power amplifiers for the 25 W, 45 W, 75 W, and 100 W power levels are now available. Refer to attached Power Amplifier Cross Reference Table, Detail C.
2. Additional shielding, including a ferrite toroid (E1) which is connected in series with the transmitter rf output of the power amplifier, has been added to only the 75 W and 100 W power levels.
3. The alternate power amplifiers use different output transistors, but are directly interchangeable with current version power amplifiers. However, if a PA final is to be replaced as a unit (microstrip) it must be replaced by the same type unit (microstrip). If this is not done damage to the radio will occur. Refer to attached cross reference table, Detail C.
4. Changes to instruction manual 68P81034E50-A:
 - A. In the Transmit Circuitry Section, Power Amplifier Final Stages Schematic Diagrams PEPS-23565-B (pages 6 and 7 of 8, 100 W PA's) are changed to add (1) a ferrite toroid (E1) to the PA rf output stage, (2) additional models, and (3) a note to the component value table. Add Detail A, Controlled Stage and Predriver schematic diagram DEPS-16261-C (Revised) to page PEPS-23565-A, Sheet 5 of 8. Replace existing pages with revised attached pages.

- B. In the Transmit Circuitry Section, Parts List PEPS-23565-B page 8 of 8 has been revised to add additional parts to PL-1910-J (75 & 100 W PA) as follows:

14-84430G02, Insulator
26-83616M01, Bracket
26-83617M01, Shield, power
75-83618M01, Pad
76-83466K01, Toroid, ferrite (E1)

In addition, the 25 W, 45 W, 75 W and 100 W PA parts lists have been changed to add transistors used with alternate power amplifiers. Replace the existing page with the revised attached page.

5. Changes to instruction manual 68P81015E70-H:

- A. In the Transmitter Section, Power Amplifier Schematic Diagram PEPS-16265-C, is revised to add a ferrite toroid (E1) to the 75 W and 100 W power amplifier schematics in series with the PA rf transmitter output to antenna network, and transistors used with alternate version PA's are added to the 75 W and 100 W power amplifier component value tables. Replace existing page with revised attached page.
- B. In the Transmitter Section, Power Amplifier Schematic Diagram PEPS-16259-C is revised to add a ferrite toroid (E1) to 100 W power amplifier schematic in series with the PA rf transmitter output to antenna network. Add Detail B, Controlled Stage and Predriver Schematic diagram DEPS-23817-O (Revised) to page PEPS-16264-C. Replace existing page with revised attached page.
- C. In the Transmitter Section, Parts List page PEPS-21306-C, has been revised as follows:
PL-1910-J changed as stated in Section 4, paragraph B; in addition PL-1892-F (25 W PA), PL-1896-F (45 W PA), PL-2009-F (75 W PA), PL-1894-E (75 W PA Driver), and PL-1902-E (100 W PA), have been revised to include transistors used in alternate version power amplifiers. Replace existing page with revised attached page.

6. Attachments

- A. For instruction manual 68P81034E50-A:
Power Amplifier Final Stages Schematic Diagram PEPS-23565-B pages 6 and 7 of 8.
Parts List PEPS-23565-B, page 8 of 8.
Detail A Controlled Stage Predriver Schematic Diagram DEPS-16261-C (Revised).
Power Amplifier Cross-Reference Table, Detail C.
- B. For instruction manual 68P81015E70-H:
Power Amplifier Schematic Diagram, PEPS-16265-C
Power Amplifier Schematic Diagram, PEPS-16259-C
Detail B Controlled Stage Predriver Schematic Diagram DEPS-23817-O (Revised).
Parts List Page, PEPS-21306-C
Power Amplifier Cross-Reference Table, Detail C

Power Amplifier Cross-Reference Table

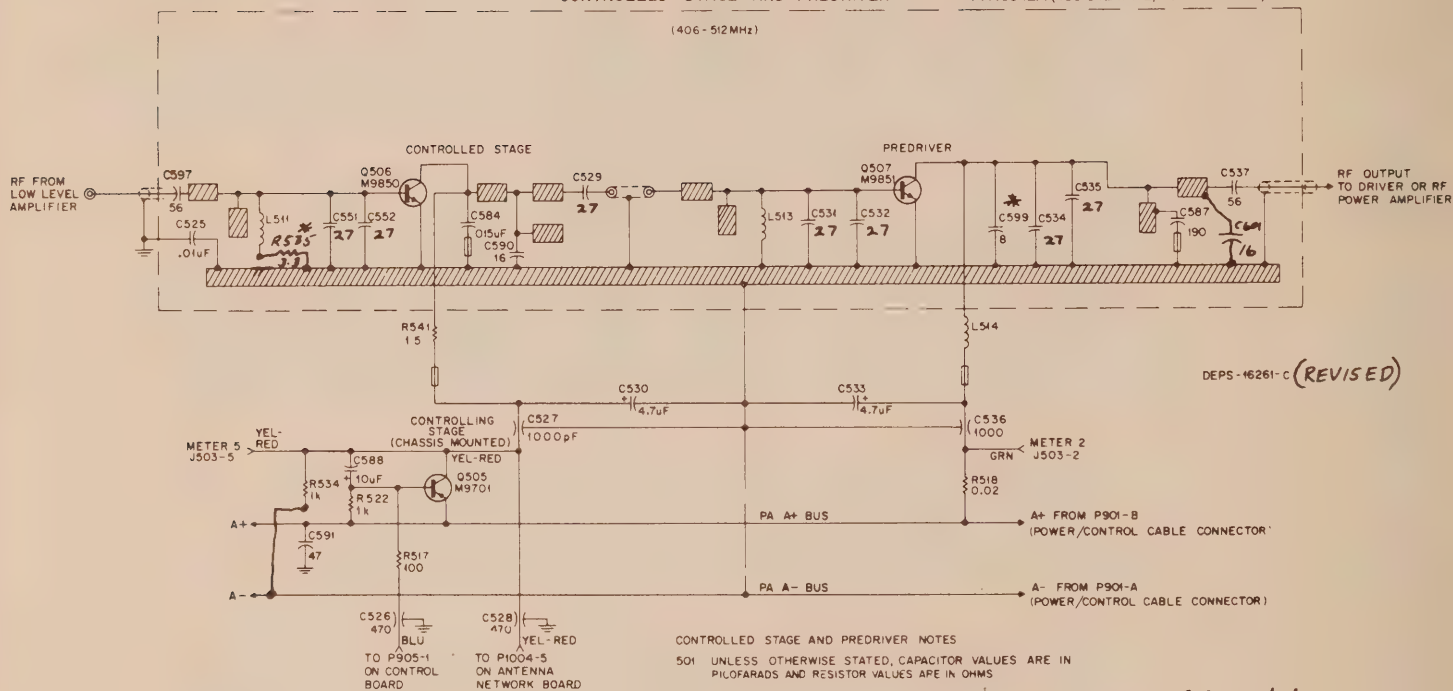
Asterisked (*) items are alternate power amplifiers
Non-Asterisked items are existing power amplifiers

Radio Model Series	Freq. Range (MHz)	Radio Unified Chassis	Power Amplifier Assembly	Driver	Final (L.H.)	Final (R.H.)	Transistor and Qty. Used
T34 (25 W STD)	450-470	TUE1483AK	TLE1473B *TLE1993A	TRN8732A *TRN4258A			M9741 (1) M9980 (1)
T34 (25 W WST)	450-470	TUE1523AK	TLE1513B *TLE2003A	TRN8732A *TRN4258A			M9741 (1) M9980 (1)
T44 (45 W STD)	450-470	TUE1493AK	TLE1483B *TLE2013A	TRN8734A *TRN4259A			M9755 (2) M9981 (2)
T44 (45 W WST)	450-470	TUE1533AK	TLE1523B *TLE2023A	TRN8734A *TRN4259A			M9755 (2) M9981 (2)
T44 (45 W STD)	494-512	TUE1495AK	TLE1485B (NO ALTERNATE AVAILABLE)	TRN4259A			M9981 (2)
T44 (45 W WST)	494-512	TUE1535AK	TLE1525B (NO ALTERNATE AVAILABLE)	TRN4259A			M9981 (2)
T54 (75 W STD)	450-470	TUE1503AK	TLE1493B *TLE2033A	TRN8731A *TRN8731A	TLE5182A *TLE5241A	TLE5172A *TLE5231A	M9740 (2) ea. half M9982 (2) ea. half
T54 (75 W WST)	450-470	TUE1543AK	TLE1533B *TLE2043A	TRN8731A *TRN8731A	TLE5182A *TLE5241A	TLE5172A *TLE5231A	M9740 (2) ea. half M9982 (2) ea. half
T74 (100 W STD)	450-470	TUE1513AK	TLE1503B *TLE2053A	TRN8735A *TRN8735A	TRN8736A *TRN4261A	TRN8688A *TRN4260A	M9741 (2) ea. half M9980 (2) ea. half
T74 (100 W WST)	450-470	TUE1553AK	TLE1543B *TLE2063A	TRN8735A *TRN8735A	TRN8736A *TRN4261A	TRN8688A *TRN4260A	M9741 (2) ea. half M9980 (2) ea. half

DETAIL C

TRN8737A (406-420 MHz, 45 W & 100 W)
TTN6041A (450-512 MHz, 25 W & 45 W)
TTN6042A (450-512 MHz, 75 W & 100 W)

(406 - 512 MHz)



*502. C599 AND R535 USED WITH 45W P.A. ONLY
IN 494-512 MHZ RANGE.

DETAIL A.

POWER AMPLIFIER FINAL STAGES (406-420 MHz)

MODELS TLE1480B, TLE2023A
TLE1500B, TLE2033A
TLE1520B, TLE2043A
TLE1540B, TLE2053A
TLE2013A, TLE2063A

FUNCTION

The PA uses cascaded stages to produce a high level rf output. Several models are available to accommodate various power levels. Each PA contains a low level amplifier, a controlled stage, and a final power amplifier. Stability and protection of the amplifier is ensured by a dc voltage which sets the power output by adjusting the level from the controlled stage.

TBACK

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9669-C

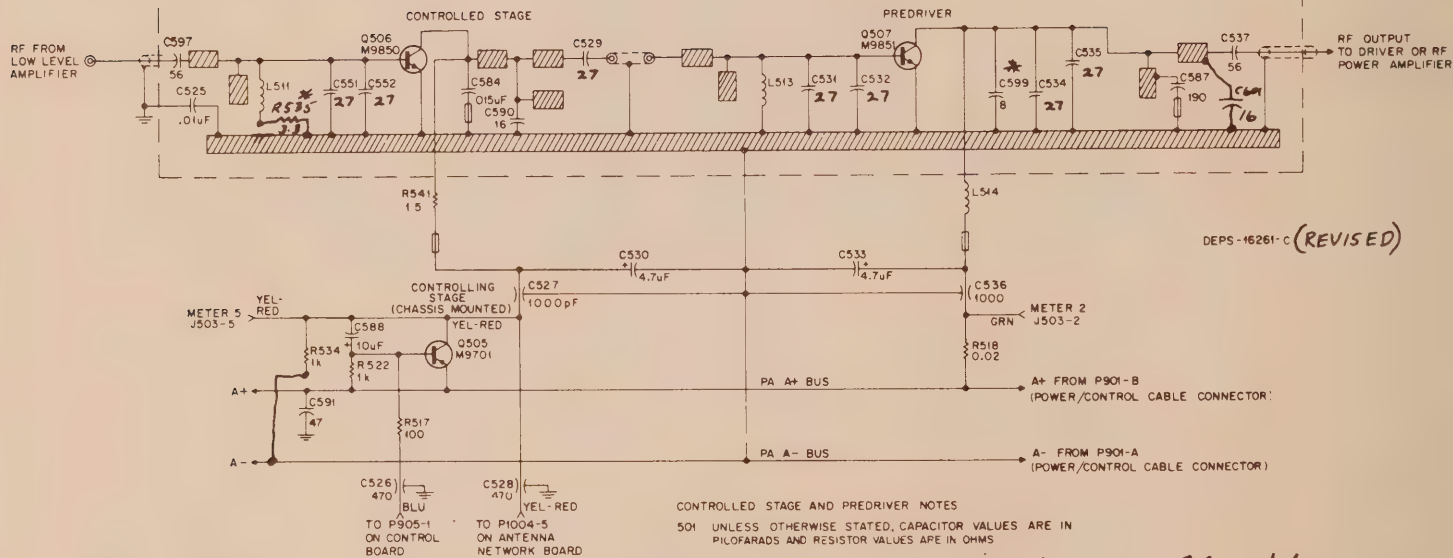
FROM } TO
P901-B } POWER/CONTROL
FROM } CABLE
P901-A } CONNECTOR

POWER AMPLIFIER
FINAL STAGES (406-420 MHz)

CONTROLLED STAGE AND PREDRIVER

TRN8737A (406-420 MHz, 45 W & 100 W)
TTN6041A (450-512 MHz, 25 W & 45 W)
TTN6042A (450-512 MHz, 75 W & 100 W)

(406-512 MHz)



*502. C599 AND R535 USED WITH 45W P.A. ONLY
IN 494-512 MHZ RANGE.

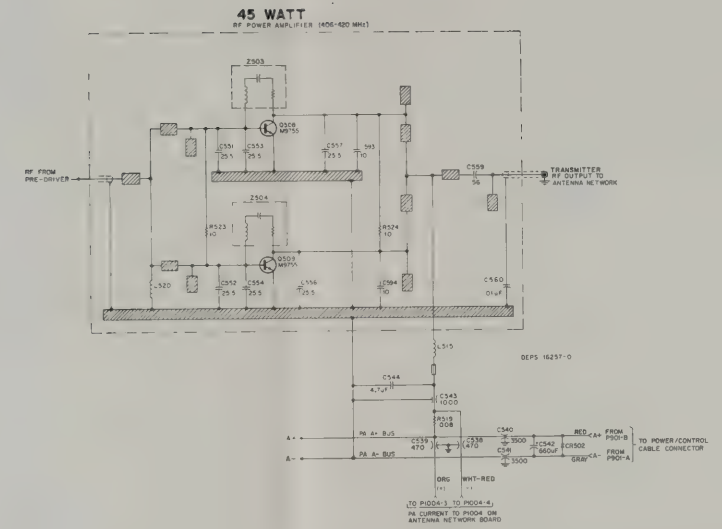
DETAIL A.

POWER AMPLIFIER FINAL STAGES (406-420 MHz)

MODELS TLE1480B, TLE2023A
TLE1500B, TLE2033A
TLE1520B, TLE2043A
TLE1540B, TLE2053A
TLE2013A, TLE2063A

FUNCTION

The PA uses cascaded stages to produce a high level rf output. Several models are available to accommodate various power levels. Each PA contains a low level amplifier, a controlled stage, and a final power amplifier. Stability and protection of the amplifier is ensured by a dc voltage which sets the power output by adjusting the level from the controlled stage.



POWER AMPLIFIER NOTES

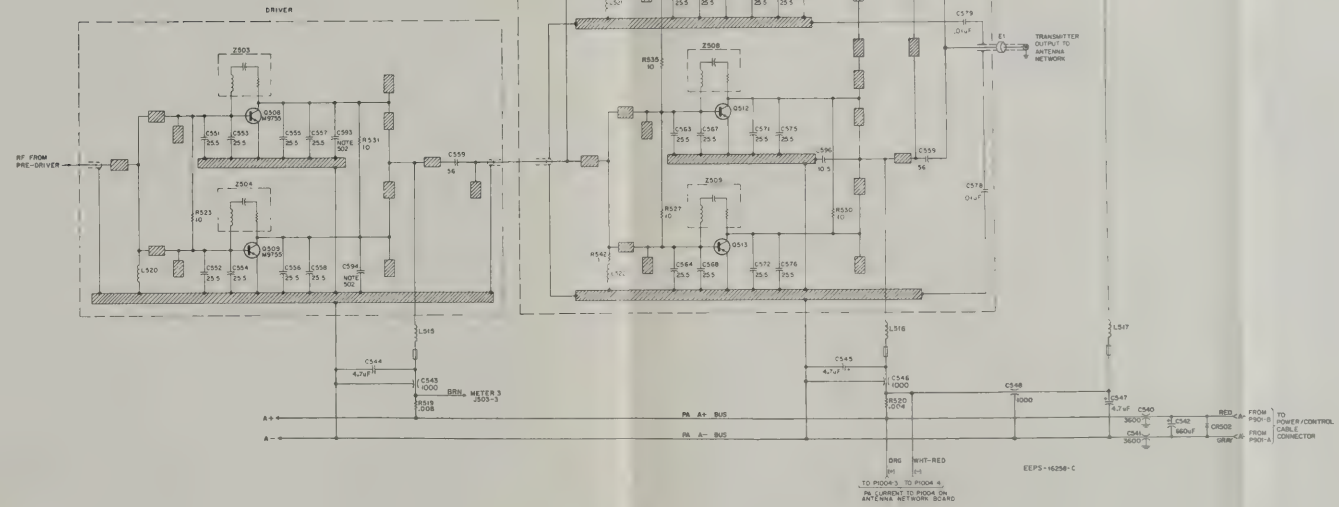
501. VOLTAGES DEPENDENT UPON AMOUNT OF CUTBACK FROM POWER CONTROL BOARD.
502. VOLTAGES MEASURED IN RESPECT TO A+ UNLESS OTHERWISE SPECIFIED.
503. UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES ARE IN PICOFARADS.
504. RESISTOR VALUES ARE IN OHMS.
505. FOR COMPONENT VALUES NOT STATED ON THE SCHEMATIC DIAGRAM, REFER TO THE ACCOMPANYING TABLE.
506. FILTER AND REVERSE VOLTAGE PROTECTION CIRCUITRY COMMON TO ALL POWER AMPLIFIERS.

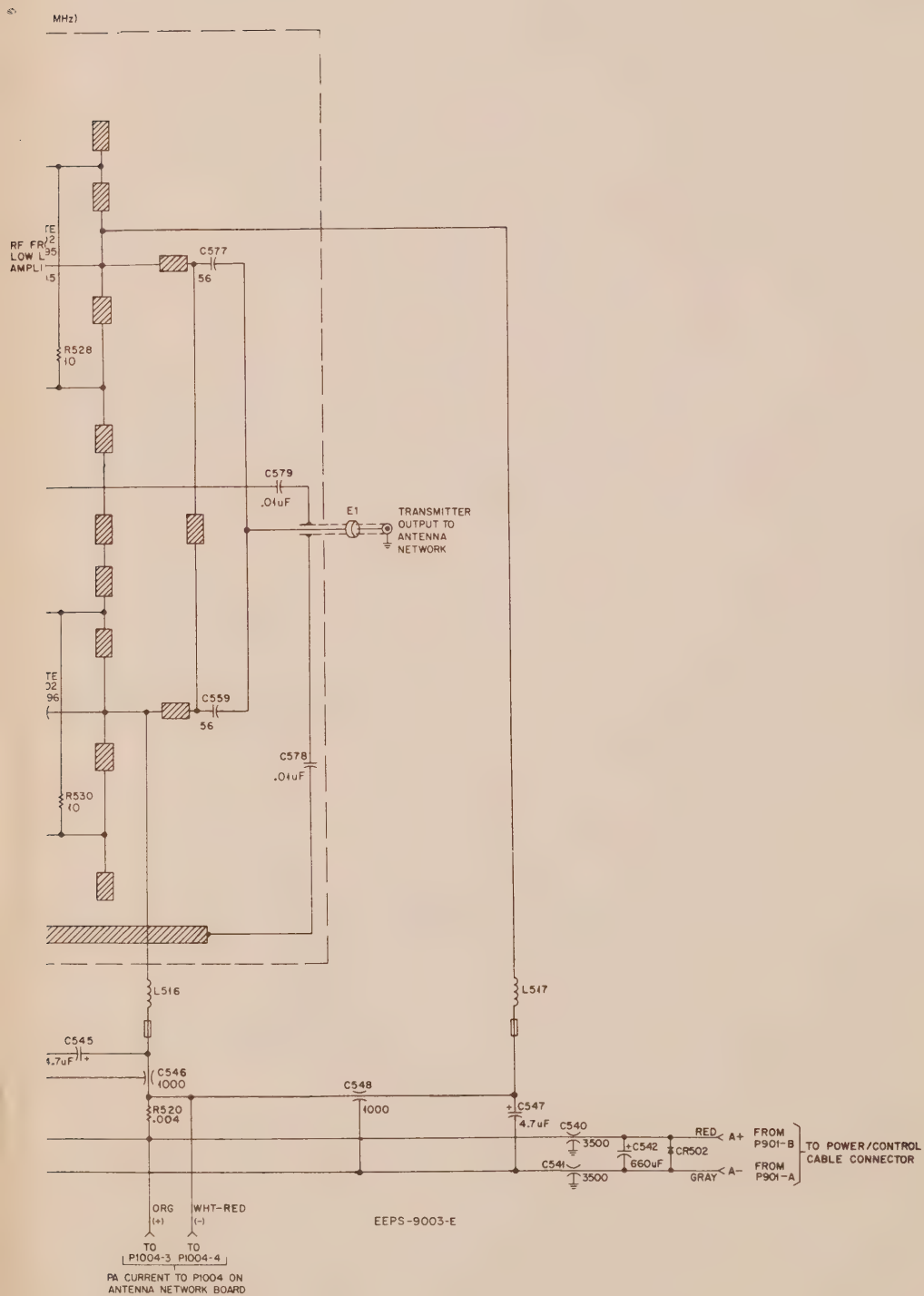
NEPS-9665-C

100-WATT PA DRIVER COMPONENT VALUE TABLE		
COMPONENT	420-470 MHz	470-510 MHz
R530, R540	10	4.7
C553, C554	6pF	NOT USED

100-WATT POWER AMPLIFIER COMPONENT VALUE TABLE		
COMPONENT	420-470 MHz	470-510 MHz
R530, R540	10	4.7
C553, C554	6pF	NOT USED

• WHEN TLE1480B OR TLE2023A PA'S ARE USED, Q501-Q503 ARE NOT USED.
• WHEN TLE1500B OR TLE2033A PA'S ARE USED, Q501-Q503 ARE USED.
• WHEN TLE1520B OR TLE2043A PA'S ARE USED, Q501-Q503 ARE USED.
• WHEN TLE1540B OR TLE2053A PA'S ARE USED, Q501-Q503 ARE USED.





MOTOROLA PART NO.	DESCRIPTION
----------------------	-------------

REF
S

75 & 100 W PA

LEGEND:

L = 406-420 MHz
M = 450-470 MHz
H = 470-512 MHz

8203A Microstrip Kit **

ents Kits
2 MHz)
420 MHz)
470 MHz)
512 MHz)

PL-1910-J

thru 576

21-84736E3

thru 512

48-869755

NON-REFER

1-80739B27

1-80739B28

1-80739B29

1-80739B30

100

N5660A Microstrip Kit

N5084A Microstrip Kit

1 thru

21-84736E3

08, 509

48-869755

NON-REFERENC

1-80754B03

1-80754B09

1-80739B11

1-80739B13

CAPACITOR, fixed:

1000 pF $\pm 100-0\%$; 500 V; coded
RED dot

4.7 μ F $\pm 20\%$; 35 V

56 pF $\pm 10\%$; 50 V

0.01 μ F $\pm 20\%$; 50 V

5.1 pF $\pm .25$ pF; 50 V

0.015 μ F $\pm 10\%$; 100 V

10 pF $\pm 5\%$; 500 V

6 pF ± 0.5 pF; 500 V

10.5 pF $\pm 5\%$; 250 V

1500 pF $\pm 10\%$; 100 V

3.0 pF $\pm 5\%$; 500 V

COIL, rf choke:

6 turns; sleeved

2-1/2 turns thru ferrite core

3-1/2 turns; coded RED

3-1/2 turns; coded RED

CONNECTOR, plug; coaxial:

male; miniature type

female; right-angle; sub-

miniature bayonet type

RESISTOR, fixed:

100-ohm $\pm 5\%$; 3 W

meter shunt; .008 $\pm 1\%$

meter shunt; .004 $\pm 1\%$

10 $\pm 10\%$; 1/2 W

1.0 ohm, 10%; 1/2 W

(450 470 MHz)

4.7 $\pm 5\%$; 1/2 W (470-512 MHz)

1 $\pm 5\%$; 1/2 W

LINE, RF transmission:

includes P501 and 30-859004

CABLE, RF; coaxial; type

RG-188/U 4" length required

includes 30-82921H01

CABLE, RF; coaxial;

7" length required

consists of a 1/2" length of

solid rf coaxial cable,

processed

FILTER, parasitic suppressor:

hybrid

REFERENCED ITEMS

01 MICROSTRIP HOLDER/INSU-
LATOR
02 GROUND STRAP: 0.385" wide
03 GROUND STRAP: 0.250" wide
01 FERRITE BEAD
01 GROUND STRAP
7 BUSS BAR
01 RETAINER, shield
01 INSULATOR, mylar
1 BRACKET, strain-relief
(For W502)
02 INSULATOR
01 BRACKET
01 SHIELD, power
01 PAD
01 TOROID, ferrite (E1)

POWER AMPLIFIER

MODELS TLE1470B, TLE1510B
TLE1480B, TLE1520B
TLE1500B, TLE1540B
TLE1993A, TLE2003A
TLE2013A, TLE2023A
TLE2033A, TLE2043A
TLE2053A, TLE2063A

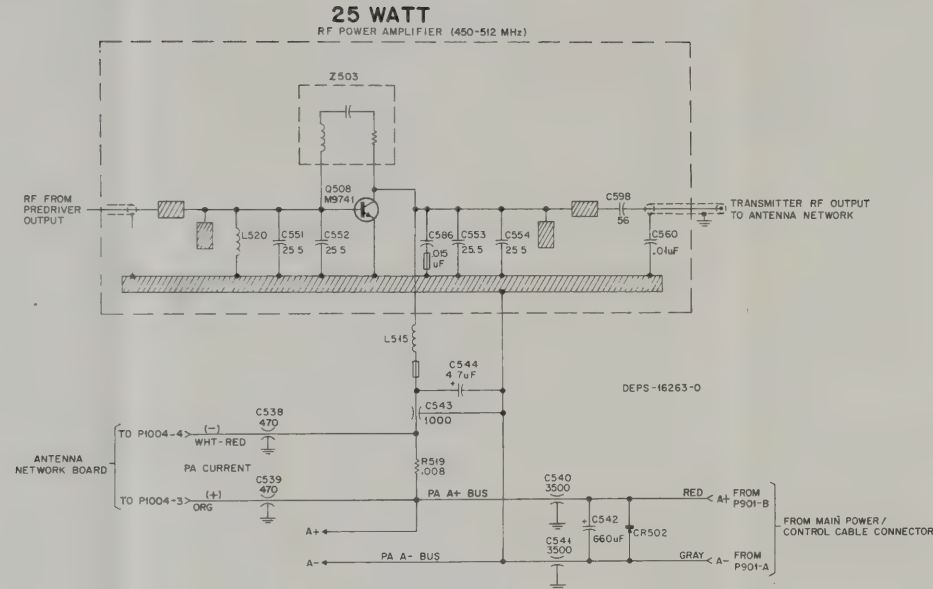
POWER AMPLIFIER

POWER AMPLIFIER FINAL STAGES (450-512 MHz)

MODELS TLE1470B, TLE2003A
TLE1480B, TLE2013A
TLE1500B, TLE2023A
TLE1510B, TLE2033A
TLE1520B, TLE2043A
TLE1540B, TLE2053A
TLE1993A, TLE2063A

FUNCTION

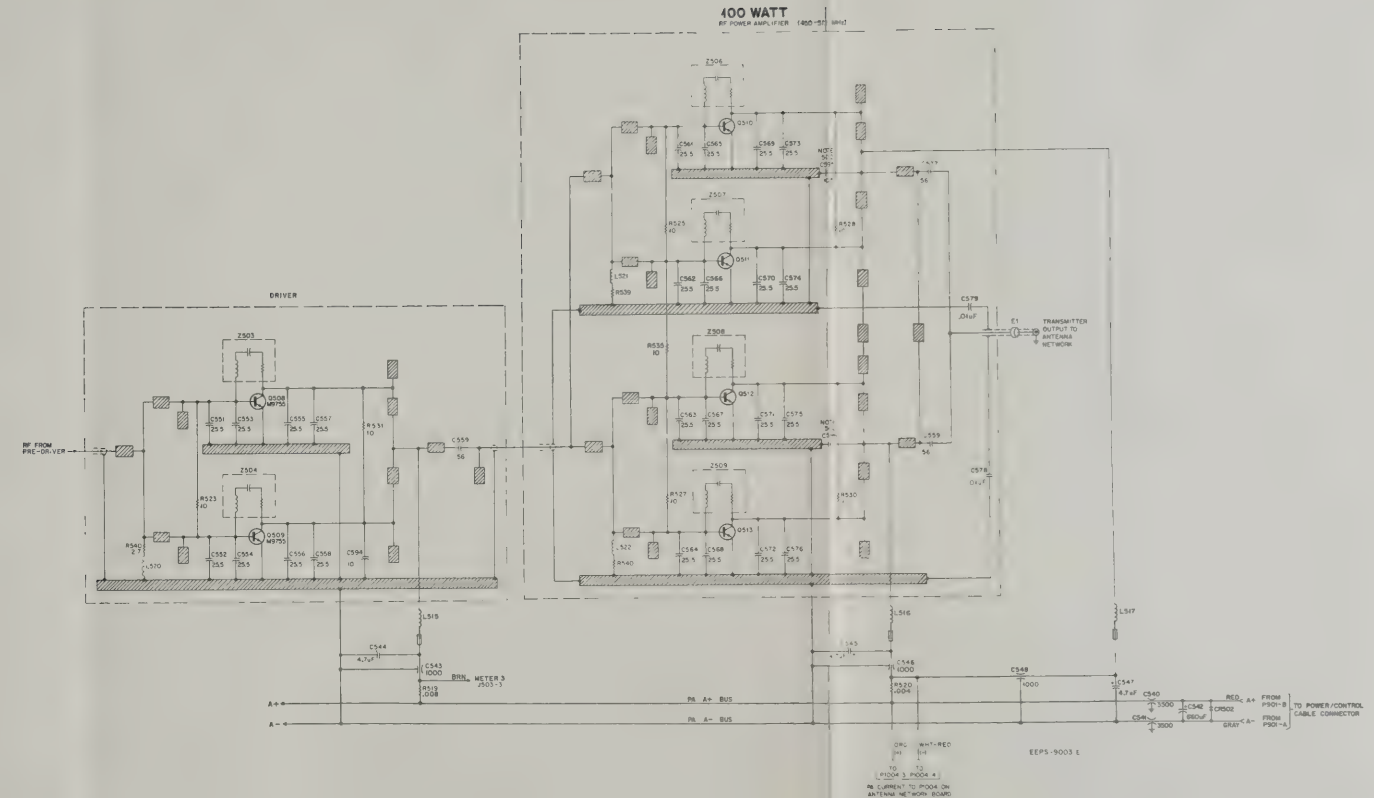
The PA uses cascaded stages to produce a high level of output. Several models are available to accommodate various power levels. Each PA contains a low level amplifier, a controlled stage, and a final power amplifier. Stability and protection of the amplifier is ensured by a dc voltage which sets the power output by adjusting the level from the controlled stage.



POWER AMPLIFIER NOTES

501. VOLTAGES DEPENDENT UPON AMOUNT OF CUTBACK
FROM POWER CONTROL BOARD.
502. VOLTAGES MEASURED IN RESPECT TO A+ UNLESS
OTHERWISE SPECIFIED.
503. UNLESS OTHERWISE SPECIFIED:
CAPACITOR VALUES ARE IN PICOFARADS
RESISTOR VALUES ARE IN OHMS.
504. FOR COMPONENT VALUES NOT STATED ON THE
SCHEMATIC DIAGRAM, REFER TO THE ACCOMPANY
ING TABLE.
505. FILTER AND REVERSE VOLTAGE PROTECTION
CIRCUITRY COMMON TO ALL POWER AMPLIFIERS.
506. SEE PARTS LIST FOR VALUES.

NEPS-9669-C



REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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PARTS LIST

LOW LEVEL AMPLIFIER		
Standards		
TLR8061A (406-420 MHz) L		
TLR8063A (450-470 MHz) M		
TLR8064A (470-494 MHz) H		
TLR8065A (494-512 MHz) HH		
Wide-Spaced		
TLR8071A (406-420 MHz) L		
TLR8073A (450-470 MHz) M		
TLR8074A (470-494 MHz) H		
TLR8075A (494-512 MHz) HH		
	PL-1912-C	
C500L	21-82610C03	CAPACITOR, fixed: 47 pF ±5%; 200 V; N220
C500M, H, HH	21-124554	22 pF ±5%; 500 V; NP0
C501, 506, 519, 521	21-821474	470 pF ±20%; 500 V
C502L	21-84873H22	16 pF ±5%; 50 V; NP0
C502M, H, HH	21-84873H20	12 pF ±5%; 50 V; NP0
C503L, 507L, 508L, 510L, 513L, 514L, 517L, 522L, 523L	21-05157A07	100 pF ±20%; 50 V
C503M, H, HH, 507M, H, HH, 508M, H, HH, 510M, H, HH, 513M, H, HH, 514M, H, HH, 522M, H, HH, 523M, H, HH	21-84873H17	56 pF ±10%; 50 V; NP0
C509M, H, HH, 519M	21-84873H01	3.3 pF ±0.5 pF; 50 V; NP0
C511, 512, 515, 521	21-84547A05	.01 uF ±20%; 50 V; Y5F
C516L	21-84873H22	16 pF ±5%; 50 V; NP0
C516M	21-84873H18	22 pF ±5%; 50 V; NP0
C516H, 517H, 517HH	21-84736E05	16 pF ±5%; 50 V (BLK)
C517M	21-84736E10	35.5 pF ±5%; 50 V (RED)
C518M	21-84873H18	12 pF ±5%; 50 V; NP0
C518H, HH	21-84736E04	5.1 pF ±0.25 pF; 50 V
C520	21-82783B11	4.7 uF ±20%; 35 V
C592M, H, HH	21-84736E06	28 pF ±5%; 50 V (ORG)
Diode (SEE NOTE I)		
C8501	48-84616A01	hot-carrier
COIL, RF		
L501L, 502L, 507L, 509L	24-82723H07	choke: 10 uH
L501M, H, HH, 502M, H, HH, 507M, H, HH, 509M, H, HH	24-84813E01	choke: GRAY
	24-84813E02	choke: PURPLE
TRANSISTOR (SEE NOTE II)		
Q491, 502	48-869757	NPN; type M9757
Q493	48-869736	NPN; type M9736 (SEE NOTE III)
Q504	48-869737	NPN; type M9737 (SEE NOTE III)
RESISTOR, fixed:		
R492		factory-selected
R513	6-124B55	2.7k ±5%; 1/4 W
R514	6-124C09	22 ±10%; 1/4 W
R537M, H, HH	6-185B57	15 ±10%; 1/8 W
SUPPRESSOR:		
Z501M, H, HH	1-80739B47	parasitic

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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NON-REFERENCED ITEMS		
1-80754B10	HYBRID AMPLIFIER (Class "A")	
1-80747B12	TLR8061A, TLR8071A only	
1-80739B02	HYBRID AMPLIFIER (Class "A")	
	TLR8063A, TLR8073A only	
1-80754B11	HYBRID AMPLIFIER (Class "A")	
	TLR8064A, TLR8065A, TLR8074A and TLR8075A only	
1-80739B49	HYBRID AMPLIFIER (Class "C")	
	TLR8061A, TLR8071A only	
1-80739B54	HYBRID AMPLIFIER (Class "C")	
	TLR8063A, TLR8073A only	
1-80739B04	HYBRID AMPLIFIER (Class "C")	
	TLR8064A, TLR8065A, TLR8074A and TLR8075A only	
	COMBINER NETWORK:	
	TLR8071A, TLR8073A, TLR8074A and TLR8075A only	
	PLASTIC HOLDER, microstrip CONNECTOR, male; phono type	
	FERRITE BEAD: TLR8061A and TLR8071A only	
	FERRITE BEAD: TLR8063A, TLR8064A, TLR8065A, TLR8073A, TLR8074A and TLR8075A	
	CABLE, coaxial (solid)	

- NOTES:
- Replacement diodes and transistors must be ordered by Motorola part numbers for optimum performance.
 - Order PK791 Kit for replacement.
 - Order PK792 Kit for replacement.

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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PA METERING BOARD

R515	17-82350A12	RESISTOR, fixed: 0.08 ±10%; 1 W
R516	6-126B82	390k ±10%; 1/4 W
NON-REFERENCED ITEM		
1-80734B64	PA METERING BOARD ASSEMBLY includes J501, R515, R516	

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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R517	17-82291B21	RESISTOR, fixed: 100 ohm ±5%; 3 W
R518	17-82620B03	0.02 ohm ±10%; 3 W
R521	6-5551	120 ohm ±10%; 1/2 W
R522, 534	6-127B02	1k ±10%; 1/4 W
R535	6-124B67	3.3 ohm ±5%; 1/4 W
R541L	17-82291B40	1.5 ±5%; 5 W
R541M, H	17-82291B39	2.0 ohm ±5%; 5 W
R542L	NOT USED	
R542M, H	6-869851	10 ohm ±10%; 1/2 W
QX0505	9-83662A01	SOCKET, transistor: female; 2-contact
NON-REFERENCED ITEMS		
1-80754B01	MICROSTRIPS, input (TLN5658A only)	
1-80739B05	input (TLN5076A only)	
1-80769B98	input (TTN6012A only)	
1-80754B02	output (TLN5658A only)	
1-80739B06	output (TLN5076A only)	
1-80769B99	output (TTN6012A only)	
42-84470E01	MICROSTRIP HOLDER/INSULATOR	
42-84473E02	GROUND STRAP: 0.385" wide	
42-84473E03	GROUND STRAP: 0.250" wide	
76-84069B01	FERRITE BEAD	

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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CONTROLLED STAGE & PREDRIVER		
TLN5658A & TTN6012A Microstrip Kit ** (406-420 MHz)		
TLN5658A Microstrip Kit ** (406-420 MHz)		
TTN6012A Microstrip Kit ** (450-512 MHz)	PL-1890-G	
CAPACITOR, fixed:		
C525	21-84547A05	0.01 uF ±5%; 50 V
C526, 528	21-821474	470 pF ±20%; 500 V; coded
C527, 536	21-861219	1000 pF ±100-0%; 500 V; coded RED dot
C529	21-84736E31	56 pF ±10%; 50 V (TLN5658A and TLN5076A only)
	21-84736E10	25.5 pF ±5%; 50 V (TTN6012A only)
C530, 533, 591	23-82783B11	47 uF ±20%; 35 V
C531, 532, 534	21-84736E10	28 pF ±5%; 50 V; P120
535, 551, 552	21-84736E06	28 pF ±5%; 50 V; P90
C537	21-84736E10	25.5 pF ±5%; 50 V (TLN5658A and TLN5076A only)
	21-84736E31	56 pF ±10%; 50 V (TTN6012A only)
C584, 585	8-82905G15	0.015 uF ±10%; 100 V
C587	21-848978	190 pF ±3%; silver mica
C588	23-83124C20	10 uF; 20 V
C590	21-84366702	16 pF ±5%; 250 V
C592	21-859936	15 pF ±5%; 500 V
C597	21-832501	0.01 uF ±80-20%; 250 V (TLN5658A & TLN5076A only)
	21-84873H26	56 pF ±10%; 50 V (TTN6012A only)
C599	21-851846	8 pF ±0.25 pF; NP0
C601	21-84736E08	16 pF ±5%; 50 V
L512, 514	24-84346A03	COIL, RF, choke: 2 1/2 turns through ferrite core
Q505	48-869701	PNP; type M9701; does not include 14-83575A01 insulator, transistor mounting
Q506	48-869738	NPN; type M9738 (TLN5658A and TLN5076A only)
Q507	48-869739	NPN; type M9739 (TLN5658A and TLN5076A only)
	48-869851	NPN; type M9851 (TTN6012A only)
RESISTOR, fixed:		
R517	17-82291B21	100 ohm ±5%; 3 W
R518	17-82620B03	0.02 ohm ±10%; 3 W
R521	6-5551	120 ohm ±10%; 1/2 W
R522, 534	6-127B02	1k ±10%; 1/4 W
R535	6-124B67	3.3 ohm ±5%; 1/4 W
R541L	17-82291B40	1.5 ±5%; 5 W
R541M, H	17-82291B39	2.0 ohm ±5%; 5 W
R542L	NOT USED	
R542M, H	6-869851	10 ohm ±10%; 1/2 W
QX0505	9-83662A01	SOCKET, transistor: female; 2-contact
NON-REFERENCED ITEMS		
1-80754B01	MICROSTRIPS, input (TLN5658A only)	
1-80739B05	input (TLN5076A only)	
1-80769B98	input (TTN6012A only)	
1-80754B02	output (TLN5658A only)	
1-80739B06	output (TLN5076A only)	
1-80769B99	output (TTN6012A only)	
42-84470E01	MICROSTRIP HOLDER/INSULATOR	
42-84473E02	GROUND STRAP: 0.385" wide	
42-84473E03	GROUND STRAP: 0.250" wide	
76-84069B01	FERRITE BEAD	

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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75 W PA		
TLR203A Microstrip Kit ** (470-512 MHz)		PL-1900-E
C561 thru 576	21-84736E32	CAPACITOR, fixed: 27 pF ±5%; 50 V; P90
Q509 thru 512	48-869755	TRANSISTOR: (SEE NOTE I) NPN; type M9755
NON-REFERENCED ITEMS		
1-80739B27	MICROSTRIP (input; front)	
1-80739B28	MICROSTRIP (input; rear)	
1-80739B29	MICROSTRIP (output; front)	
1-80739B30	MICROSTRIP (output; rear)	
100 W PA DRIVER		
TLN5660A Microstrip Kit ** (406-420 MHz)		
TLN5084A Microstrip Kit ** (450-512 MHz)	PL-1898-C	
C551 thru 558	21-84736E32	CAPACITOR, fixed: 27 pF ±5%; 50 V; P90
Q508, 509	48-869755	TRANSISTOR: (SEE NOTE I) NPN; type M9755
NON-REFERENCED ITEMS		
1-80754B03	MICROSTRIPS, input (406-420 MHz)	
1-80754B04	output (406-420 MHz)	
1-80739B11	input (450-512 MHz)	
1-80739B13	output (450-512 MHz)	

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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PA COMPONENT KIT parts lists)		
25 W PA		
TLN5078A Microstrip Kit ** (450-512 MHz)		PL-1892-F
C551 thru 554	21-84736E32	CAPACITOR, fixed: 27 pF ±1 pF; 50 V; P120
C560	21-84736E06	28 pF ±5%; 50 V; P90
C598	21-84736E31	.01 uF ±20%; 50 V
	21-84736E31	56 pF ±10%; 50 V
C508	48-869741 or 48-869980	TRANSISTOR: (SEE NOTE I) NPN; type M9741 or NPN; type M9980
NON-REFERENCED ITEMS		
1-80739B15	MICROSTRIP (input)	
1-80739B35	MICROSTRIP (output)	
45 W PA		
TLN5659A Microstrip Kit ** (406-420 MHz)		
TLN5082A Microstrip Kit ** (450-512 MHz)	PL-1896-F	
C551-554, 556, 557, 558, 559	21-84736E10 or 21-84736E06	CAPACITOR, fixed: 25.5 pF ±1 pF; 50 V; P120
C560	21-84547A05	28 pF ±5%; 50 V; P90
	21-84547A05	.01 uF ±20%; 50 V
Q508, 509	48-869755 or 48-869981	TRANSISTOR: (SEE NOTE I) NPN; type M9755 or NPN; type M9981
NON-REFERENCED ITEMS		
1-80754B03	MICROSTRIPS, input (406-420 MHz)	
1-80754B04	output (406-420 MHz)	
1-80739B11	input (450-512 MHz)	
1-80739B12	output (450-512 MHz)	

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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100 W PA		
TLN5689A Microstrip Kit ** (470-512 MHz)		
TLN5661A Microstrip Kit ** (406-420 MHz)		
TLN5088A Microstrip Kit ** (420-470 MHz)	PL-1902-E	
C561 thru 576	21-84736E32 or 21-84736E06	CAPACITOR, fixed: 27 pF ±1 pF; 50 V; P120
Q510 thru 513	48-869741 or 48-869980	TRANSISTOR: (SEE NOTE I) NPN; type M9741 or NPN; type M9980
NON-REFERENCED ITEMS		
1-80754B05	MICROSTRIPS (406-420 MHz) input (front)	
1-80754B07	input (rear)	
1-80754B06	output (front)	
1-80754B08	output (rear)	
1-80739B27	MICROSTRIPS (450-512 MHz) input (front)	
1-80739B28	input (rear)	
1-80705D71	output (front) TLN5088A only	
1-80739B45	output (rear) TLN5088A only	
1-80739B46	output (rear) TLN5689A only	

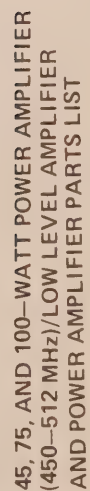
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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HARDWARE KIT		
Hardware Kit		
For Standard Transmitter Radio Sets		
TLN5096A/B (Carrier Squelch)		
TLN4931A/B ("Private-Line")		
For Wide-Spaced Transmitter Radio Sets		
TLN5097A/B (Carrier Squelch)		
TLN4932A/B ("Private-Line")		
P400	28-82365D03	CONNECTOR, plug: male; coaxial
P103	28-84282D01	right angle; miniature type
W101	1-80734B58	LINE, RF transmission: includes P400, P103 and 30-83794C01 CABLE, RF: coaxial; 11' length req'd

**These kits cannot be ordered. Order the individual parts listed in the parts list.

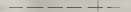
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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25 & 45 W PA		
TLR8082A ** (25 W)		
TLR8091A ** (45 W; 40-420 MHz)		
TLR8092A ** (45 W; 40-512 MHz)		
PL-1907-G		
C538, 439	21-821474	CAPACITOR, fixed: 470 pF ±20%; 500 V; coded 470 pF ±20%; 500 V; coded
C540, 541	21-84211B03	3500 pF ±100-0%; 500 V @ 85° C
C542	23-83210A22	660 pF ±150-10%; 25 V
C543	21-861219	1000 pF ±100-0%; 500 V; coded RED dot
C544	21-82278B11	4.7 uF ±20%; 35 V
C585, 598	21-84736E31	56 pF ±10%; 50 V
C586	8-82905G15	.015 uF ±10%; 100 V
C591	21-859211	47 pF ±5%; 300 V
C593, 594	21-84494B29	10 pF ±5%; 500 V
SEMICONDUCTOR DEVICE, diode: (SEE NOTE I) silicon		
CR502	48-82525G13	
COIL, RF, choke: 6 turns; sleeved 2-1/2 turns thru ferrite core		
L515	24-84346A03	
L520	24-83977B02	
CONNECTOR, plug: coaxial: male; miniature type female; right-angle; sub- miniature bayonet type		
P501	28-84282D01	
P502	9-84886E01	
RESISTOR, fixed: meter shunt; .008 ±1% 120 ohm; 1/2 W 18 ±10%; 1/4 W 10 ±10%; 1/4 W		
R517	6-84605E01	
R519	6-5551	
R520	6-10401C49	
R523, 524	6-5621	
LINE, RF transmission: includes P501 and 30-850004 CABLE, RF; coaxial; type RG-188/U; 4" length required includes 30-82911H01 CABLE, RF; coaxial; 1/4" length required consists of a 1/2" length of solid RF coaxial cable, processed		
W501	1-80734B38	
W502	1-80734B40	
W503	30-83693F01	
FILTER, parasitic suppressor: hybrid		
Z503, 504	51-84312B59	
NON-REFERENCED ITEMS		
MICROSTRIP HOLDER/ INSULATOR GROUND STRAP: 0.385" wide GROUND STRAP: 0.250" wide FERRITE BEAD BUSS BAR RETAINER, shield INSULATOR, mylar		



9-9

RF POWER ADJUSTED



REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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75 & 100 W PA

LEGEND:

L = 406-420 MHz
M = 450-470 MHz
H = 470-512 MHz

75 W & 100 W PA Components Kits
TLE8102A ** (75 W; 450-512 MHz)
TLE8111A ** (100 W; 406-420 MHz)
TLE8112A ** (100 W; 450-470 MHz)
TLE8113A ** (100 W; 470-512 MHz)

PL-1910-J

C543, 546, 548	21-861219	<u>CAPACITOR, fixed:</u> 1000 pF ±100-0%; 500 V; coded RED dot
C544, 545, 547	23-82783B11	4.7 uF ±20%; 35 V
C559, 577, 598	21-84736E31	56 pF ±10%; 50 V
C578, 579	21-84547A05	0.01 uF ±20%; 50 V
C580 thru 583	21-84736E07	5.1 pF ±.25 pF; 50 V
C586	8-82905G15	0.015 uF ±10%; 100 V
C593L, 594L	21-84494B29	10 pF ±5%; 500 V
C593M, 594M	21-83107B07	6 pF ±0.5 pF; 500 V
C595L, 596L	21-82877B11	10.5 pF ±5%; 250 V
C595H, 596H	21-82187B11	1500 pF ±10%; 100 V
C600	21-82133G45	3.0 pF ±5%; 500 V
L515, 516, 517	24-84346A03	<u>COIL, rf choke:</u> 6 turns; sleeved
L520M, 520H	24-83977B02	2-1/2 turns thru ferrite core
L520L,	24-83884G01	3-1/2 turns; coded RED
L521, 522	24-83884G01	3-1/2 turns; coded RED
P501	28-84282D01	<u>CONNECTOR, plug; coaxial:</u> male; miniature type
P502	9-84886E01	female; right-angle; sub-miniature bayonet type
R517	17-82291B21	<u>RESISTOR, fixed:</u> 100-ohm ±5%; 3 W
R519	6-84605E01	meter shunt; .008 ±1%
R520	6-84606E01	meter shunt; .004 ±1%
R523, 525, 527	6-5621	10 ±10%; 1/2 W
528, 530, 531		
535, 536		
R539	6-125D70	1.0 ohm, 10%; 1/2 W (450 470 MHz)
R540	6-125B61	4.7 ±5%; 1/2 W (470-512 MHz)
R541, 542	6-125D70	1 ±5%; 1/2 W
W501	1-80748B40	<u>LINE, RF transmission:</u> includes P501 and 30-859004 CABLE, RF; coaxial; type RG-188/U 4' length required
W502	1-80734B40	includes 30-82921H01 CABLE, RF; coaxial; 7' length required
W503	30-83693F01	consists of a 1/2" length of solid rf coaxial cable, processed
Z503, 504, 506, 507, 508, 509	51-84312R59	<u>FILTER, parasitic suppressor:</u> hybrid

NON-REFERENCED ITEMS

42-84470E01	MICROSTRIP HOLDER/INSULATOR
42-84473E02	GROUND STRAP: 0.385" wide
42-84473E03	GROUND STRAP: 0.250" wide
76-84069B01	FERRITE BEAD
42-84473E01	GROUND STRAP
1-80734B37	BUSS BAR
42-84930G01	RETAINER, shield
14-84430G01	INSULATOR, mylar
7-84631E01	BRACKET, strain-relief (For W502)
14-84430G02	INSULATOR
26-83616M01	BRACKET
26-83617M01	SHIELD, power
75-83618M01	PAD
76-83466K01	TOROID, ferrite (E1)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
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ANTENNA SWITCHING NETWORK

TFE6221A Antenna Switch Network (406-420 MHz)
TFE6223A Antenna Switch Network (450-470 MHz)
TFE6224A Antenna Switch Network (470-494 MHz)
TFE6225A Antenna Switch Network (494-512 MHz)
TFE6331A Antenna Switch Network (406-420 MHz)
TFE6333A Antenna Switch Network (450-470 MHz) PL-4484-O

C1001, 1002, 1003	21-821474	<u>CAPACITOR, fixed:</u> 470 pF ±20%; 500 V (feedthru type)
C1004		NOT USED
C1005	21-82785H56	5 pF ±0.5 pF; 850 V
C1006	21-82989E67	5.5 pF ±.25 pF; 500 V
C1007, 1008	21-82355B62	1 pF ±.25 pF; 500 V
C1009, 1010, 1011	19-84774E01	variable: 2.04 to 9.9 pF; 250 V
C1012 thru 1015		NOT USED
C1016, 1017	21-821474	470 pF ±20%; 500 V (feedthru type)
CR1001, 1002	48-84616A01	<u>DIODE: (SEE NOTE)</u> hot carrier
CR1003, 1004	48-82392B12	silicon
E1001	-	<u>CIRCULATOR:</u> (See Note III)
FL1001	-	<u>LOW PASS FILTER:</u> (See Note III)
K1001	1-80747B76	<u>RELAY, reed:</u> (See Note II)
L1001, 1002	24-82723H04	<u>COIL, rf:</u> 0.29 uH
P1001	28-84884E02	<u>CONNECTOR, plug:</u> coaxial, male
P1002	-	(See Note III)
P1003	28-84282D01	phono, male
Q1001	48-869640	<u>TRANSISTOR: (SEE NOTE I)</u> NPN; type M9640
R1001	6-124A03	<u>RESISTOR, fixed: ±5%; 1/4 W:</u> unless otherwise stated
R1002, 1003		12
R1004	6-124A49	NOT USED
R1005	-	1k (See Note III)

NOTES:

- For optimum performance replacement diodes and transistors must be ordered by Motorola part numbers.
- Field service of K1001 not recommended, must be replaced as a unit.
- Field replacement of E1001, FL1001, P1002 and R1005 not recommended. For replacement, order the entire unit. Specify kit number and frequency range required.

HARDWARE KIT

Hardware Kit

For Standard Transmitter Radio Sets

TLN5096A/B (Carrier Squelch)
TLN4931A/B ("Private-Line")

For Wide-Spaced Transmitter Radio Sets

TLN5097A/B (Carrier Squelch)
TLN4932A/B ("Private-Line")

PL-1883-A

P400	28-82365D03	<u>CONNECTOR, plug: male;</u> coaxial;
P103	28-84282D01	right angle; miniature type
W101	1-80734B58	miniature type
		<u>LINE, RF transmission:</u> includes P400, P103 and 30-83794C01 CABLE, RF; coaxial; 11" length req'd

ER AMPLIFIER (406-420 MHz)

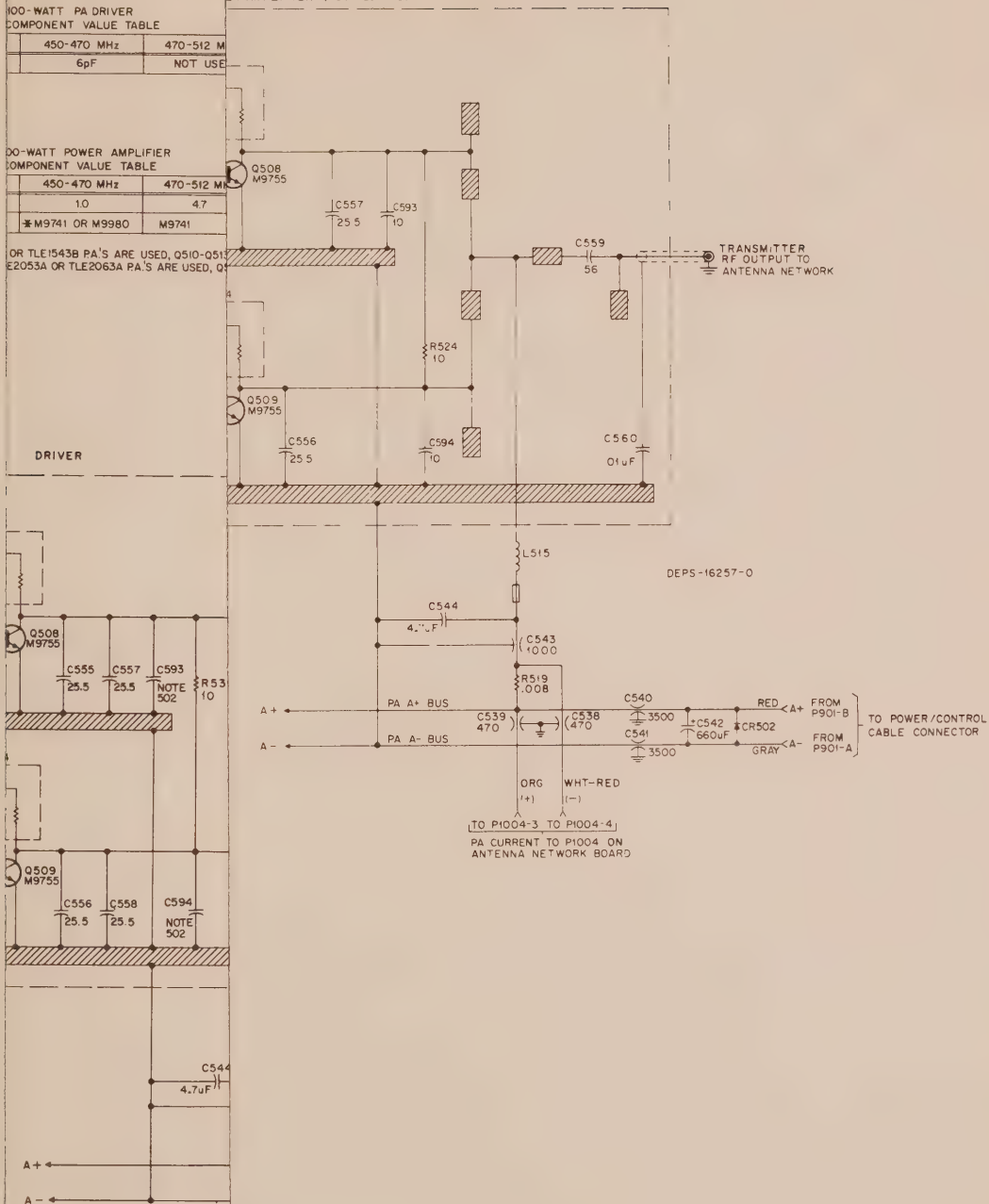
450-470 MHz	470-512 MHz
6pF	NOT USED

450-470 MHz	470-512 MHz
6pF	NOT USED

	450-470 MHz	470-512 MHz
	1.0	4.7

	450-470 MHz	470-512 MHz
	1.0	4.7

OR TLE1543B PA'S ARE USED, Q510-Q513
E2053A OR TLE2063A PA'S ARE USED. Q



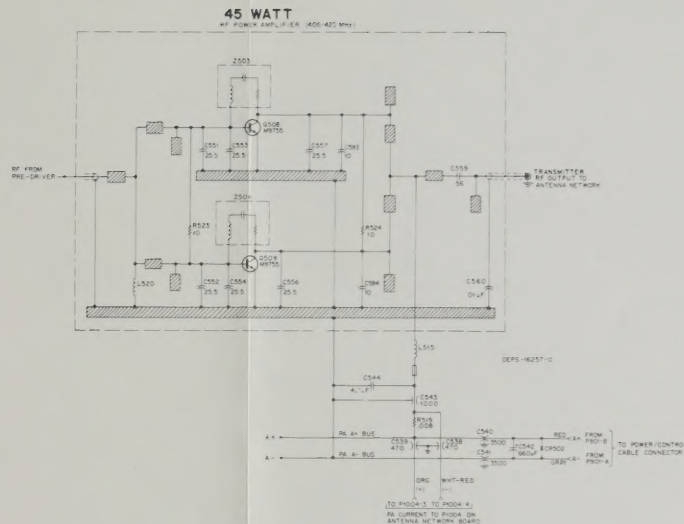
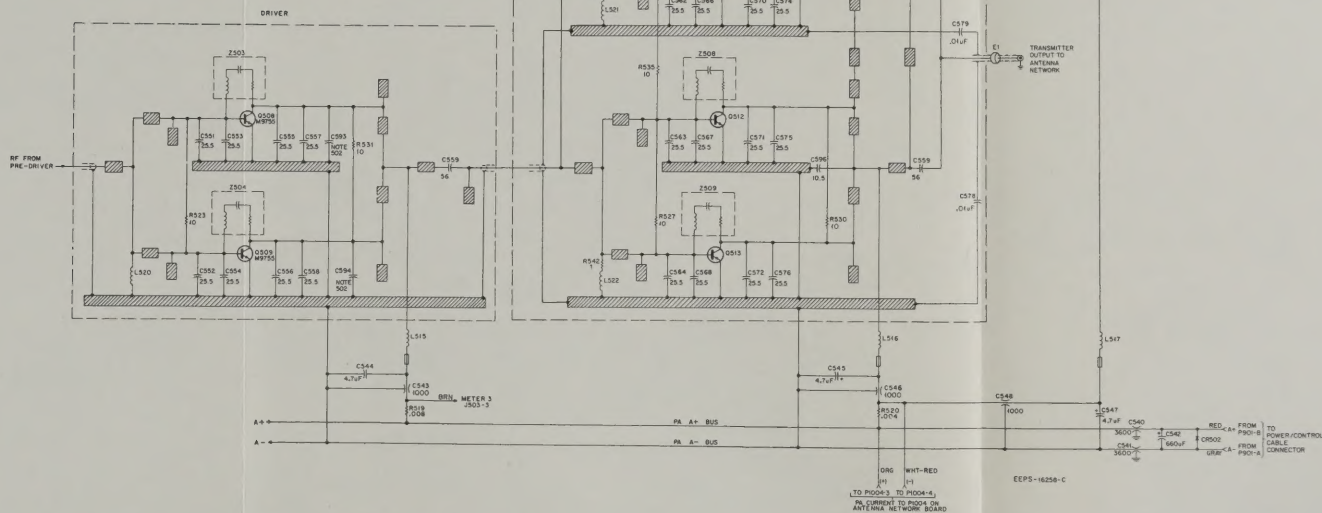
45 AND 100 WATT POWER AMPLIFIERS (406-420 MHz)/LOW LEVEL AMPLIFIER (450-512 MHz), PA METERING, AND CONTROLLED STAGE & PREDRIVER

406-420 MHz 45-Watt and 100-Watt
Power Amplifiers
Schematic Diagrams
Motorola No. PEPS-16259-D
2/13/80-PHI

100-WATT PA DRIVER COMPONENT VALUE TABLE		
COMPONENT	400-470 MHz	470-512 MHz
C933, C934	8pF	NOT USED

100-WATT POWER AMPLIFIER COMPONENT VALUE TABLE		
COMPONENT	400-470 MHz	470-512 MHz
R533, R540	1Ω	47
R 5500 TO 5517	W97N1 OR W9980	W97N1

• WHEN TLE10208 OR TLE10438 PA'S ARE USED, C900-C913 ARE NOTN. WHEN TLE2053A OR TLE2043A PA'S ARE USED, C910-C913 ARE W9980



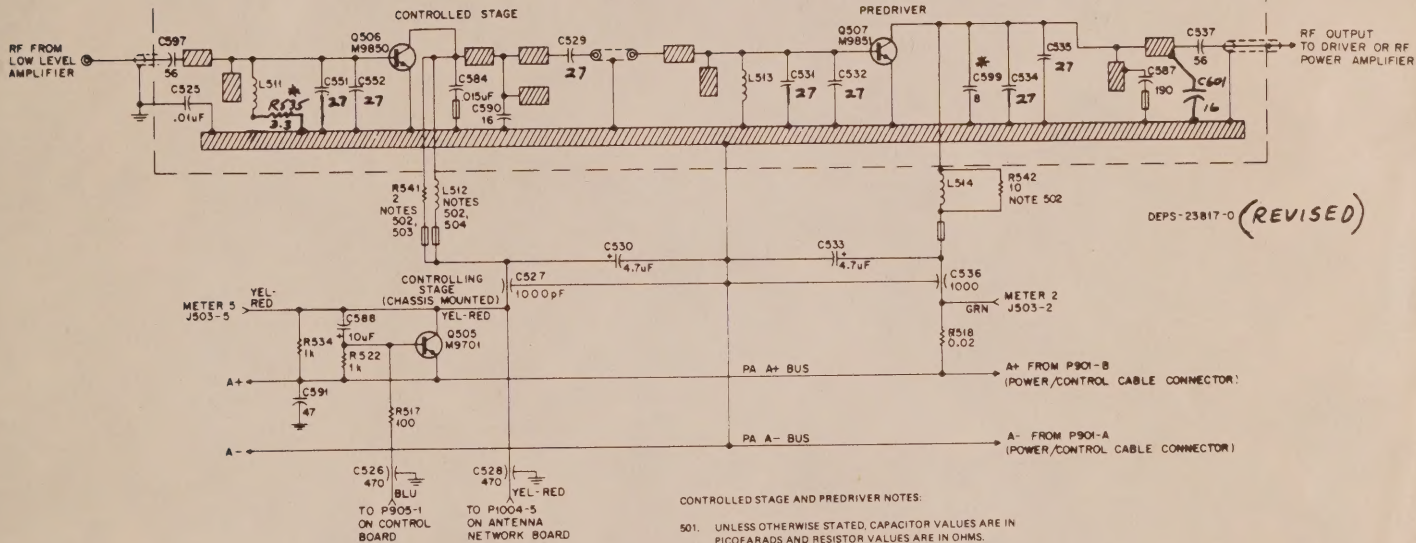
406-420 MHz 45-Watt and 100-Watt
Power Amplifiers
Schematic Diagrams
Motorola No. PEPS-16259-D
2/13/80-PHI

LATER MODEL

TRN8737A (406-420 MHz, 45 W & 100 W)
TTN6041A (450-512 MHz, 25 W & 45 W)
TTN6042A (450-512 MHz, 75 W & 100 W)

CONTROLLED STAGE AND PREDRIVER

(406-512 MHz)



CONTROLLED STAGE AND PREDRIVER NOTES:

- 501. UNLESS OTHERWISE STATED, CAPACITOR VALUES ARE IN PICOFARADS AND RESISTOR VALUES ARE IN OHMS.
- 502. USED IN 450-512 MHz ONLY.
- 503. USED IN 25W AND 75W MODELS ONLY.
- 504. USED IN 45W AND 100W MODELS ONLY.

* 505. C599 AND R535 USED WITH 45W PA, ONLY IN 494-512 MHz RANGE.

DETAIL B.

